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ENERGY AND AGRICULTURE

HEARING

BEFORE THE

COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY UNITED STATES SENATE

ONE HUNDRED SIXTH CONGRESS

SECOND SESSION

ON

ENERGY AND AGRICULTURE

JULY 20, 2000

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ENERGY AND AGRICULTURE

THURSDAY, JULY 20, 2000

U.S. SENATE,
COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY,
Washington, DC.

The Committee met, pursuant to notice, at 9:04 a.m., in room SD–106, Dirksen Senate Office Building, Hon. Richard G. Lugar, (Chairman of the Committee,) presiding.

Present: Senators Lugar, Grassley, Harkin, Conrad, Kerrey, and Johnson.

OPENING STATEMENT OF HON. RICHARD G. LUGAR, A U.S. SENATOR FROM INDIANA, CHAIRMAN, COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY

The CHAIRMAN. This meeting of the Senate Agriculture Committee is called to order. We are privileged to have today a number of distinguished witnesses to discuss energy policy in our country with special pertinence to agriculture.

I will issue an opening statement. When Senator Harkin, our Ranking Member, has arrived, he will be recognized, and then we will hear from the distinguished Secretary of Energy, Secretary Richardson, and members will ask questions after each of our first three witnesses, and likewise the distinguished panel that will follow.

I begin the hearing by raising what I believe is a very important question: Are Americans prepared for the inevitable consequences resulting from the lack of a strategic energy policy? Does an energy policy exist with our government or with private industry that will guarantee adequate energy supplies for a growing American economy? And, if not, who will tell the American people that we are headed for lower growth in jobs, income, comforts, standard of living, and competitive position in the world?

In my judgment, our Nation is facing an emerging energy crisis. Demand for energy is rapidly increasing, and supplies may not be emerging to meet this demand, even at high prices. We are here today to assess present energy policy and determine if amendments to our policy are appropriate. And in addition to high prices at the gasoline pump, we have been alerted recently to possible shortages of natural gas, and will discuss this morning potential electrical brownouts.

In reviewing our energy policy, we must consider the fact that events beyond our borders have tremendous impact. As economics of developing nations continue to grow, so will their demands for

energy. Such growth will fuel the greenhouse gas problem and increase world dependence on Persian Gulf oil.

OPEC decisionmaking is a major factor. I invited the oil minister of Saudi Arabia, Ali Naimi, to participate in today's hearing. He replied he is unable to attend due to previous commitments.

Economic growth in the United States has produced a tight market for many forms of energy. Electricity demand in the first half of the year 2000 is up 3.5- to 4-percent from the previous year. Over half the increase in world oil demand from 1998 to 1999 was attributable to increased United States demand for oil. The price of natural gas and diesel have risen dramatically due to increased demand, tight supplies, low inventory. We know the United States needs to build new power plants, but current plans are for these plants to be fired by natural gas. Are natural gas supplies adequate to meet that demand?

At the Federal level, are we doing enough to address the transmission problems that could be associated with increasingly deregulated electricity markets? The Energy Information Administration forecasts the demand for natural gas is likely to increase by 2-percent per year over the next 20-years. Energy security expert Daniel Yergen asks whether we are prepared to make the investments in exploration, new pipelines, and distribution facilities needed to meet this rapidly growing market.

At the same time the demand for energy is growing, new environmental regulations are being imposed upon energy facilities and fuels, and many of these policies are needed to produce a cleaner environment. The Reformulated Gasoline Program is one example.

We also need to assess our energy research and technology policies in light of the greenhouse gas problem. I have cosponsored Senator Murkowski's legislation to further the growth of new energy technologies. Senator Daschle and I have introduced a bill to solve the MTBE problem and triple the use of renewable fuels by the year 2010. We have introduced a market trading system to allow oil companies to produce renewable fuels in the areas of the country where they can most economically be marketed.

President Clinton recently signed into law my bill to establish an aggressive research, development and demonstration program, making it easier to convert biomass into ethanol. Since biomass feed stocks tend to have very low cost, this program could lead to dramatic reductions in the cost of making ethanol.

One additional idea I think needs to be considered is the creation of a presidentially led energy and environmental security task force to coordinate our environmental and energy security programs. Such a task force, in my judgment, should include at least representatives of the National Security Council, the Council of Economic Advisors, the Departments of Agriculture, Energy, EPA, Transportation, and Treasury.

[The prepared statement of Senator Lugar can be found in the appendix on page 50.]

I would welcome comments from our distinguished witnesses on any of these legislative initiatives.

Finally, I simply thank the witnesses for coming, for their preparation for what I think will be a very important hearing, and I now

turn to my distinguished colleague, Senator Tom Harkin of Iowa, for his opening remarks.

STATEMENT OF HON. TOM HARKIN, A U.S. SENATOR FROM IOWA, RANKING MEMBER, COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY

Senator HARKIN. Mr. Chairman, first of all I want to thank you for calling this important hearing on energy policy and the impact on energy policy and the impact on American agriculture. I also want to commend and thank you for your leadership on the initiative you took to get the administration to start moving ahead on the research needed to convert biomass to some of our renewable fuels, especially in the cellulosic area. I think that really holds a great promise, and again I commend you for your leadership in that area.

In March I sent a letter to you, Secretary Richardson, and to Secretary Glickman. I am pleased by your decision to form a working group to examine the implications of high oil prices for farmers. I have also hoped that we can try to get to the bottom of some of these exorbitant increases in gasoline prices in the Midwest.

Farmers have a lot at stake with respect to energy costs and our national energy policies. Even though farmers have greatly increased their energy efficiency over the years, they are still highly vulnerable to these price increases, especially now, when corn in Iowa is down to about $1.40 a bushel and beans are about $4.40 a bushel. Things are pretty tight in the Midwest right now.

And right now USDA estimates that direct fuel expenses for farmers will increase by $2.5 billion or 40-percent this year compared to 1999—40-percent compared to last year. Higher energy prices are also reflected in the greater costs for grain drying, fertilizer, pesticides. The Iowa Farm Business Association estimates that higher energy costs will add more than $1,300 to this year's expenses for a 660-acre-corn-and-soybean farm. So any actions that can be taken to alleviate the impacts on farmers would certainly help.

Frankly, though, as the Chairman does, I see agriculture more as a solution to our energy challenges than as a problem area. I think we have barely scratched the surface of the potential for agriculture to supply domestically produced renewable and environmentally friendly energy.

Renewable sources now constitute only about 3-percent of U.S. energy supplies and only about 1.2-percent of gasoline, but our reliance on foreign petroleum is growing dramatically, to the point where we now import about 60-percent of our petroleum. We are far more reliant now than we were in the 1970s.

But renewable fuels like ethanol and biodiesel enhance our energy security. They improve our environment. They increase farm income. They create jobs and economic growth in rural communities. Ethanol use already adds about 20-cents-a-bushel to the price of corn. Replacing MTBE with ethanol would add another 14-cents-to-corn-prices and increase farm income by about $1 billion a year.

There is also tremendous potential in biomass such as switchgrass, and wind energy, which is a growing industry, by the

way, in my State. I saw your comments on that, Mr. Secretary. Hydrogen used in fuel cells will allow efficient use of biofuels and the storage and transportation of wind and solar energy.

If renewable energy is going to have a chance to get a footing and grow, it will have to be given an opportunity to do so. That is why I was so outraged by the efforts to lay the blame for high Midwest gasoline prices on clean air rules and the use of ethanol. The facts are now out, and the facts show the blame was unfounded and unfair, but this experience is a harsh lesson in how hard we are going to have to continue to fight for the increased use of renewable fuels.

Mr. Chairman, again, I thank you for calling this hearing and for your great leadership in this area.

[The prepared statement of Senator Harkin can be found in the appendix on page 52.]

The CHAIRMAN. Thank you very much, Senator Harkin.

Secretary Richardson, we are delighted to have you, and would you please proceed?

STATEMENT OF HON. BILL RICHARDSON, SECRETARY. U.S. DEPARTMENT OF ENERGY, ACCOMPANIED BY DAN REICHER, ASSISTANT SECRETARY OF ENERGY FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY; AND MARK MAZUR, ACTING DIRECTOR, ENERGY INFORMATION ADMINISTRATION

Secretary RICHARDSON. Thank you. Mr. Chairman, Senator Harkin, I want to commend you for the very broad, gracious way you tied all the issues together, and I commend you, especially this committee, for holding this hearing and for your singular contribution in the area of bioenergy, which could be the future for our energy security.

Senators I first would like to join you in expressing my personal condolences to the death of a member of your committee, Senator Coverdell, and I would express my sympathy to his wife, Nancy. I would like to just state that for the record.

Mr. Chairman, I want to thank you for giving me the opportunity to speak with you about some of the issues you discussed. I also would like to address the alternative opportunities we now have, specifically in biofuels, on which your committee has worked very hard, which can help ease our Nation's excessive dependence on fossil fuels.

Mr. Chairman, Senator Harkin, we both have opportunities to answer the Nation's energy challenges. My responses to the energy issues of this year have been grounded in the Clinton-Gore administration's energy policy. These are the six points that we believe are the key foundations of our policy:

One, market forces and not artificial pricing. Two, diversity of supply, and strong diplomatic relations with energy producing nations. Three, improving the production and use of traditional fuels through new technology development. Four, diversity of energy sources, with long-term investment in alternative fuels and energy sources. Five, increasing efficiency in the way we use energy. And, six, maintaining and strengthening our insurance policy against supply disruption, the Strategic Petroleum Reserve.

Let me just mention, members of the Committee, some relatively good news on pricing, although I am most sensitive to some of the serious problems in America's farm economy. Mr. Chairman, as you know, we are seeing some recent signs of encouragement in our oil and gas markets, thanks to our adhering to this policy.

The Energy Department's Information Administration is now reporting that conventional regular gasoline has dropped 13-cents-per-gallon since this time last month nationwide, from $1.68 to $1.55. In the Midwest, regular gasoline is down 28-cents, from $1.87 to $1.49. And also in the Midwest, reformulated gas has gone down 48-cents in the last month. This is good news for the American consumer. It has gone from $2 to $1.52. Hopefully these are some favorable trends. We think they may be some trends that will continue.

And, as you know, diesel is in the same family as heating oil, and we are concerned about heating oil supplies for the upcoming winter. We need to build stocks, so this is creating some price pressure on diesel which affects our Nation's farmers and truckers.

I also want to state my concern over the current low inventories of natural gas, which you did, too. We need to watch these levels carefully. Continued low inventories when the cold weather comes could force prices up considerably and put the pinch on America's families.

But we do have some good news. According to the Energy Information agency, retail, on-highway prices of diesel are down about 2-cents in just about the past 3-weeks, nationwide. In the Midwest, diesel is down 3-cents over that period. Still, they are unacceptably high.

Part of this relief stems from our work of the past 7-months, when we moved vigorously to boost supply. As you know, I have talked extensively with oil producing nations. OPEC and other producers have heard our concerns and have twice boosted their output. We hope they continue to keep an open mind.

Our latest data shows that there are roughly 3.5-million barrels per day more oil on the market than during this time last year. That is a welcome addition to the world market, and it is exerting downward pressure on gas prices.

But we can't claim victory. Regular gas is, on the average, around 38-cents more expensive than it was at this time last year. This is mainly because we simply have not been able to replenish stocks as demand continues to soar. We need to exercise longer term solutions. We need not only to ease this demand, we need to ease America from its dependency on imported energy sources, which you stated in your opening statement.

Here is a solution on meeting demand, and that is the bioenergy solution. The President is committed to such a vision, introducing proposals to boost domestic production, spur energy efficiency, and increase the use of alternative energy resources.

We have extensive opportunities in the field of bioenergy. Mr. Chairman, I know that this issue is of great personal interest to you and every member of this committee. And I see that Senator Conrad has come in. He has been a champion on these issues, too.

Examples of your leadership, Mr. Chairman, include this committee's previous hearings on the importance of biofuels; second,

your attendance and presentation at the signing ceremony, and subsequent hearing on Executive Order 13134, Developing and Promoting Biobased Products and Bioenergy; and most recently, as you stated, passage of a law, the Biomass Research and Development Act of 2000, signed by President Clinton on June 22, 2000, your bill.

Finally, I would be remiss if I didn't acknowledge your role and this committee's role in aligning the research programs at the Departments of Agriculture and Energy in this extremely important area, and the office director that is heading up these joint efforts is here with me today.

Mr. Chairman, bioenergy resources already meet over 3-percent of our Nation's energy requirements, and consumption has been rising by nearly 3-percent annually since 1990. But even this growth cannot meet our growing concerns on air quality, climate change, dependence on foreign energy supplies, and the sluggish economic conditions in the Nation's farm and forestry sectors.

If we are to see a meaningful decline in our future reliance on fossil fuels, if we are to lessen our vulnerability to interruptions in energy supply, if we are to kindle a whole new field of agricultural and forestry economics, then we need a cooperative national effort to develop a range of renewable energy sources, and bioenergy can be at the heart of such an effort.

Creating such a vigorous market will boost demand for dedicated energy crops, providing new revenue streams for farmers and new cash flow for rural economic development. The current uncertainties on the farm and in our forestry industry could be eased by long term energy crop contracts with biorefineries. This is the focus of the bioenergy initiative, integrating the existing bioenergy and bioproducts programs within the Energy Department and the Department of Agriculture. In FY 2000, we awarded more then $18 million in contracts to promote the biorefinery industry.

Mr. Chairman, I want to take a moment to commend you also for the bill you forwarded to make sure we take aggressive action on the promise of bioenergy. As you know, we have been working under the President's executive order since August of last year. That order set a goal of tripling the use of bioenergy in the U.S. by 2010. We can get there. I also want to thank Senator Harkin for his initiative in making sure we have coordinated efforts within the bureaucracy.

We have also already established the National Biobased Products and Bioenergy Coordination Office, and have produced our first integrated, multiagency strategic plan for biofuel and biopowered research. Our FY 2001 budget includes substantial increases for biofuels and biopower, $40 million at the Department of Energy and $44 million at the Department of Agriculture.

With your bill's enactment, we have taken an important step towards that goal. The world is demanding more energy. It is wise that we position America's farmers as the supplier to meet that demand.

We would like to ask that this committee lend its support to our research and development budget requests, so that we can make our research plans a reality and meet our goal of tripling the use of bioenergy in the United States.

There are also ample opportunities in wind power, which I know is of interest to this committee, and especially to Senator Harkin. Of the top 15 wind resource States, 12 are located in America's agricultural heartland.

To take advantage of this, in June of 1999 I announced the Wind Powering America Initiative, which challenges the country to harvest enough of this area's vast wind resources to generate just 5-percent of America's electricity needs. Just 5-percent will return economic benefits of over $60 billion by the year 2010.

A successful example of a good wind program is Storm Lake in Senator Harkin's home State of Iowa, which has developed the world's largest wind farm. Total annual payments to landowners in that area are already $500,000, and will continue over 20-years. Imagine what we can do nationwide.

Let me close, Mr. Chairman, with what the Clinton administration, what steps we have taken during this year to ensure that America has the energy resources it needs. You will recall the President's vigorous actions when we had a heating oil shortfall this spring, that he has proposed a heating oil reserve, and has taken aggressive actions to ensure that those who need help when cold rolls around, receive it.

We are also helping America's oil producers, testing new technologies and giving a hand to those already in the field. We have got some domestic oil and gas initiatives that we need approved by this Congress.

But there is still more that we can do to get relief to consumers. Mr. Chairman, last month the President sent a letter to Majority Leader Lott, urging that the Congress work with the administration to enact the President's pending energy proposals without delay.

The President has asked for a $4 billion package of tax incentives to encourage domestic oil and gas production, and for consumers to purchase more efficient cars, homes, and consumer products. It has idled on the Hill for 2-years.

In FY 2001 the President advanced a $1.4 billion investment for Energy Department programs in energy efficiency, renewable energy, natural gas, and distributed power systems. The Senate should be commended for supporting 97-percent of the department's FY 2001 budget for renewable energy resources, an increase of $50 million above the final House mark. I hope that the Senate prevails in budget reconciliation deliberations before the conference Appropriations Committee.

The Department is urging the Congress to appropriate our entire request of $154 million for our Weatherization Assistance Program in 2001. This will be a step towards full restoration of this vital program that reduces the heating and cooling costs of low income families by an average of $200 per year, thus helping them cope with the high prices of fuel that they, of all Americans, are least able to afford.

Also of concern, the Congress has postponed action to extend the Energy Policy and Conservation Act, which authorizes two central components of our Nation's energy security, the Strategic Petroleum Reserve and our participation in the International Energy

Agency. Mr. Chairman, I need that authority to use that Strategic Petroleum Reserve in case of an emergency.

The President also submitted—and you mentioned this, Mr. Chairman, in your opening statement, the issue of electricity reform—we have submitted the Comprehensive Electricity Restructuring Act 2-years ago, and we need Congress to enact a bill. We are encouraged by recent action in both the House and Senate, but, as you mentioned, the possibility of brownouts and blackouts and a weak electricity grid nationally is of great concern.

Mr. Chairman, it is no longer a question of if the electric utility industry is going to change, it is when. And I know that this is an issue of particular interest to rural communities, to the farming sector. We need to act on this issue now.

I have crossed the country, talking to Americans, having electricity summits, warning them about brownouts this summer. Power went out in the San Francisco Bay area last month when temperatures soared, and 3-week days ago utilities in New England and on the West Coast were stretched to the limit as the one-two punch of hot weather and the unexpected loss of several power plants nearly brought on blackouts.

Mr. Chairman, I welcome this challenge that you have offered to develop a bipartisan energy policy, and as you mentioned, we have a lot to do. I thank you for your time.

[The prepared statement of Secretary Richardson can be found in the appendix on page 69.]

The CHAIRMAN. Well, thank you very much, Secretary Richardson. Let me thank you for mentioning our colleague, Senator Coverdell, at the beginning of your comments. As I mentioned on the floor yesterday, he was a very valued member of this committee and participated vigorously with us, and we will miss him.

I simply want to start by saying I appreciate the initiatives you have outlined, and you have indicated six principles, and right at the top, market forces, diversity, diplomacy, in which you have been involved.

But my basic question still is one that must come to you and your associates almost every day, and that is, the infrastructure needed in this country to provide for the projected increases in growth year-by-year and the time frame required for all of these things to happen are not working for us. These again and again are mentioned, that even after people make decisions, there are time lags in large capital investments.

For example, the New York Times points out that even given all of the disruption of this year with regard to very high prices for gasoline and protests throughout the country, that the demand for gasoline at the pump has gone down by only seven-tenths of 1-percent. Now, the Times points out that, that is different from a 2-percent increase year-to-year the year before, 2-percent or 3-percent the previous 2-years before that.

But nevertheless we are dealing with a very big figure, the consumption of gasoline, for example, in the country, and even the escalation of prices to that level did not change demand by more than seven-tenths of 1-percent, which means that even if market forces work, and they surely will with regard to natural gas.

You have cited the low inventories. Many observers point out that they are so low that they are almost beyond remedy at this point; that it would be impossible physically to get natural gas at inventory levels that would be at all comfortable into the country. Prices already are rising. The markets speculatively take a look at that, whether it is in spot markets or in the stock market for energy companies.

And, as a matter of fact, as you point out, whether it be a brownout this summer or a plant disruption. I receive letters now from my State routinely, from heavy industrial users of natural gas who point out that if we have a very severe winter, that they may have to shut down. In addition to inconvenience at the pump, unemployment, layoffs of people occasioned by our failure to have adequate supplies.

And this is why I sort of come back to the thought, is there any comprehensive effort involving yourself, the President, the Vice President, everybody, to try to give some confidence to the American people that even though we have disruptions now that are fully foreseeable, and in some cases not easy to remedy, there is some overall plan?

Now, you point out government doesn't do this alone. Market forces, other countries, all sorts of suppliers, energy research still undone. But I just think there is a growing lack of confidence in the American people that those of us who are in charge have some idea.

And what is suspected is that the supplies will be inadequate, that prices will continually go up, and worse still, that even at any price energy will be unavailable to some of our communities. The thought will come back, well, we should have done more to conserve, that in essence we have been a wasteful people, that somehow growth of jobs and industry and what have you really is not going to be accommodated.

This is why I started with, who will give this news to the American people, that essentially we are now headed for a lower growth, lower comforts, hazardous level? I think that is unacceptable. I think the people are going to say, get the supplies, stop horsing around with this situation; find it, invest the money that is required, tell the truth as to how much it is going to cost, but we want to be supplied. In other words, we do not want to be constrained.

Now, if this is a philosophical issue, then we need to sort of fight this out. There may be those in our society who would say that we are profligates and we shouldn't want that much, but I think the majority are going to say that we do want that much. As a matter of fact, we can have that much, if we use our brains, our capital, our ingenuity, we have some framework of leadership.

Now, how do you address this overall, big problem? You have tried to address, I think correctly, the reserves that might help in New England, helping maybe a little more reserve of natural gas generally, working with the Saudis as you have, but these at best are small fixes in what is a fundamental problem, as I see it.

Secretary RICHARDSON. Mr. Chairman, you are absolutely right. The administration does have a plan. We are refining that plan. We recognize that there are potential home heating oil shortages.

We are concerned about natural gas, too, both the prices and access, and other issues.

We are concerned also about the whole issue that you mentioned, the demand for gasoline in the course of 1-year increased 4-percent, the highest ever. Now, we can pat ourselves on the back and say this is because of a booming economy and more technology, but that would be wrong.

Senator I think we need a joint strategy. I have laid out some initiatives that we would like to see passed. I think the Congress can contribute enormously by working with us. I think we need a dialogue with industry. I just met with the home heating oil industry yesterday, and I think through collaboration and partnership we are addressing some of the problems in the home heating oil situation in New England this year.

Senator, you mentioned the brownout issue. Again, I am really worried about that. I am worried about our distribution, our generation, our transmission system. We have a grid that is a Third World grid, for a booming economy for the world's biggest superpower. And that is going to take investing in more power, in regional transmission organizations, in more renewable energy.

In order to do that, Senator, we need legislation that restructures, and enables the utility industry to invest more, that allows the rural co-ops to compete and invest more, too. We need a reliability standard. Will that deal with the brownouts next month? Maybe not necessarily those, but at least it will lay us a foundation for a more modern electricity grid.

On natural gas, we need to work together. We have set up an interagency natural gas task force. We need to find ways to have the deep water royalty relief. Natural gas is clean. It is going to mean some hard choices in terms of pipelines. We think is the fuel of the future.

Senator I think in your area, bioenergy, if we can in America's heartland use crops that help our farmers, that give us energy security.

My point is, Senator, we are developing a plan, but it is going to require a national dialogue, and you accenting and pointing out these problems and these issues is very helpful, and we need to continue. I think this hearing you are having is good, I have seen the witness list, the very, very broad range of expertise. I am going to read this transcript very carefully and see if we can crank it in and move forward.

The CHAIRMAN. Thank you. Let me point out that even as we have this hearing here, on the floor is the agriculture appropriation bill. I know the distinguished Ranking Member will be involved shortly in that, so I am going to recognize him, and constrain each of us to 5-minutes or a little bit more, so that not only we can all be heard but we can hear the distinguished witnesses, and go back and forth to vote as required.

Senator Harkin.

Senator HARKIN. Thank you very much, Mr. Chairman.

Mr. Secretary, I for one want to commend you, and I want to commend your department, I want to commend the Clinton-Gore administration for their leadership on a number of issues in the energy area. Especially I want to commend you, Mr. Secretary, for

taking the leadership to establish the National Biobased Products and Bioenergy Coordinating Office which you mentioned in your opening statement. My information is that they are doing well, they are getting some proposals together, and I look forward to meeting with them myself.

I also want to commend you for the increase that you have put into your budget request for FY 2001 for biobased and bioenergy fuels. I think that is a good step in the right direction.

I also again want to commend you, and through you the Clinton-Gore administration for their energy initiatives. We have had it here now for about—it is one thing to provide leadership. You have got to have some followers hip, too.

We have had $4 billion in tax incentives for oil and gas production, for more efficient cars and homes and products. Congress hasn't done anything on it. We haven't acted on it. It has been sitting here for at least two or 3-years, if I am not mistaken, and not one thing has been done. And Congress has not acted to reauthorize the Strategic Petroleum Reserve, either.

So, quite frankly, I think, having been in Congress for a number of years, it just seems like we don't do anything unless a crisis stares us in the face. I remember when I was on the Science and Technology Committee in the House back in the 1970s, and then once the oil crisis was over with and the Reagan administration came, we dropped all of our research programs on alternative fuels because everyone just, well, everyone felt we didn't need it then. And so we just drifted through another decade, another almost two decades, without understanding what was happening with our oil and gas supplies.

One other observation, Mr. Secretary. You know, I might take a little issue now with you or with those that are saying that we should be feeling pretty good now because gasoline prices are coming down. In July of 1999, regular unleaded gasoline in Iowa was $1.10 a gallon. In June of this year it was about $1.80-these are round figures—$1.80 a gallon.

And guess what, it has dropped now down to $1.52, and we are told to feel good. You know, they boosted it up 70-cents and they have dropped it about 20-cents, and we are supposed to feel good. Nonetheless, it is still about 40 some percent higher this year than it was last year, as I said in my opening statement, with farmers. And that is hurting all of our production. It is hurting our income picture in rural areas.

Mr. Secretary, I guess the only question I really have that I would just again like to ask you about is the amount of energy and effort that you, your department, is putting into the mid and long term. You know, it just seems like we get caught up in these crises, and it is sort of the old story about the alligator and the swamp. You know, you don't really tend to think about the long term.

But once again, I think we have to begin laying the groundwork and the plans for the mid and long term production of energy in this country. And again, I just want to hear from you as to your thoughts of what your department not only is doing but what you think we should be doing in the area of biobased fuels and biobased energy production in this country, and what the potential is for wind. You mentioned we have the largest wind farm in the world

in Iowa. We do, and it is working well, and farmers are making money off of it, and it doesn't take very much land, either. The capacity there is tremendous for more of that.

So tell me what you see down the pike. I mean, what should we be doing now, not for next year, not for this year, what should we be doing for 10-years and 20-years from now?

Secretary RICHARDSON. Senator, first of all, I think you were getting some very good advice from your able staff when they said that even though the trends are good, these prices are still unacceptably high for the farm economy. So, I am not gloating over those decreases. I think we have got a favorable trend, and hopefully we are going to continue that.

I think you are so right, Senator, that we have to look at the long range because of what has happened with our economy. What would I say is something that we need to do together? You mentioned wind. I am very bullish on wind, and I think your support for continued research is key.

I didn't mention in my remarks to Senator Lugar the importance of America's refining capacity. Our refining capacity has weakened. We need to boost that. A lot of small refineries have closed in the past decade. In fact, I saw a couple in Iowa. Right near the airport there was one that closed, that I saw, that I was very concerned about. Even though total U.S. refining capacity has expanded and become more competitive, we have to be clear and careful about that.

I mentioned electricity restructuring. This is a long range investment, that we should invest in our electricity grid so it can deal with the growing demand, and that means not just investing in new power sources, not just investing in regional transmission organizations, but also in renewable energy and renewable technology, biomass, solar, wind, geothermal. I think these are investments that we delayed and somehow we have put aside, and we need to bring back.

I think renewable energy—you mentioned the tax credits—this is long range. For farmers, we recently announced an initiative that affects farmers, fuel efficiency for lighter trucks. I think there is tremendous potential here. This will involve a lot of farm equipment, farm vehicles. This is an investment that we need to work with in the future.

Natural gas, this is something that I think is going to require a national bipartisan effort, because it is not just a question of access to natural gas, it is a question of transportation, it is the whole issue of "not in my back yard." But, you know, I have encouraged a lot of our Federal buildings—and the Federal Government is the biggest consumer of energy—to do more with natural gas.

Senator I could go on and on, except to say that we do have an office of emergencies at the Department of Energy. We have a policy office. I have all of my people here.

You did ask for what specifically in biodiesel, biodiversity, bioenergy we have, and what we have planned. Dan Reicher, my expert on this is here. Mr. Chairman, could I call him up, or is that——

The CHAIRMAN. Yes, please do. Please identify yourself and your office, if you would.

Mr. REICHER. Mr. Chairman, I am Dan Reicher, Assistant Secretary of Energy for Energy Efficiency and Renewable Energy, and I will just say quickly, we are, as the Secretary noted, very excited about the opportunities for biomass. We are focused on programs that will allow us to use biomass to make power, electric power; to make liquid transportation fuels; and indeed, Mr. Chairman, to replace some of the petroleum now used in the chemical industry with biomass.

Added together, that investment in technologies to support the use of biomass for power, fuels, and chemicals, we think we can triple U.S. primary energy use from biomass to almost 10-percent by 2010, and that would be a big step forward for us. What it is going to take is increased investment in the technologies. It is going to take some smart policies. The Secretary talked about tax incentives, for example and the right environmental policies.

And it is going to take stimulating markets, as well. We think with our large energy demand in the Federal Government itself, powering our 500,000 buildings, we think we can help drive some of these new markets for biomass and bioenergy as well.

Secretary RICHARDSON. Mr. Chairman, the key is also a partnership with the private sector. Technology can take us to more energy security and fuel efficiency. New natural gas technology, new technology for wind, new technology for fuel efficiency, fuel cells, hybrid vehicles, cars, and SUVs that are 40-miles-per-gallon. That last technology is something that I wanted to underscore, too it should be a long term priority.

The CHAIRMAN. Thank you very much.

Senator Conrad.

STATEMENT OF HON. KENT CONRAD, A U.S. SENATOR FROM NORTH DAKOTA

Senator CONRAD. Thank you very much, Mr. Chairman.

Thank you, Mr. Secretary, for being here. Thanks for your leadership and your warning us repeatedly that we were headed for trouble. I can't remember how many meetings I have been in with you, or speeches that I have heard you give.

I remember very distinctly when you discussed with the Energy Research Institute at the University of North Dakota, you gave the keynote address several years ago, and warned there very clearly that we were headed for trouble, outlined a series of steps that needed to be taken, including incentives for greater production and incentives for renewables, and unfortunately precious little has been done by the Congress in response to your repeated warnings. I think we do function kind of in a crisis mode. That is, I am afraid, more typical than not for Congress.

But this is a circumstance that just a crisis response is not going to work, because when you head over the cliff and your are in a brownout, you can't respond quickly enough. That is the hard reality that we confront. These are long lead time investments that need to be made to expand capacity in oil and gas, expand capacity in renewables and all the rest.

I just put up a couple of quick charts that talk about what our farmers are facing out there, and I come from one of the most agricultural States in the Nation. This is the index of fuel prices, with

1990-'92 being the base of 100-percent. You can see what has happened from 1999 until now. It doesn't reflect fully the last little dip we have had, about 2- to 3-cents that has come off diesel in the last several weeks, which is welcome. But when we look at the movement from 95-cents a gallon last year up to over $1.50, it is pretty stunning out there. My State university says it is going to cost every farm in my State, on average, $4,000.

Let me just put up the context within which we are operating here, to show why that is a very serious blow. This chart shows in green the prices that farmers paid for inputs, and the red line is the farmers' prices received, what farmers are receiving for what they sell. I think this tells it about as dramatically as it can be told. The farmers are receiving dramatically reduced prices for what they sell. In fact, we have got record low prices. Inflation-adjusted, this is as low as it has been.

And we look at the input costs, the things that farmers have to buy, including energy, they have continued to go up, and with respect to energy they have risen dramatically. This has put farmers in a cost-price squeeze that is literally unprecedented.

I am going to my State fair this weekend. What would you say to the farmers who are going to come up to me and say, "Senator, what is being done?" alternatively, "What can be done?" If you had a very brief conversation with a North Dakota farmer and he said to you, "Mr. Secretary, what are the things that are being done right now, and what can be done," in a very thumbnail response, what would it be?

Secretary RICHARDSON. Senator, I would say five things to your farmer and your constituents. I would say first that prices are turning downward this week, that we are looking at some favorable trends.

The second thing I would say to them is, we are looking beyond, we hope to go beyond, soon, the pipeline and refinery problems that we have been experiencing.

The third thing I would say is, we need inventories to be built. I think that is key.

The fourth thing I would say is that we are hopeful that this week's downward trend is going to lead to, as I said, lower prices this summer and this fall, that red chart you had.

And then the fifth thing I would say is that we have to focus on the long term; that we have to have bipartisan support for a lot of the initiatives that you have outlined and Senator Lugar has outlined. That is funding energy R&D. That is boosting tax incentives to increase domestic production. I see Senator Johnson is here. He has been a champion of the oil and gas industry. What we have as a marginal well tax credit for oil and gas; geologic expensing; payback provisions to improve and incite exploration. And then, lastly, and you have been a champion on this, too, and that is electricity restructuring, that grid, that grid that we need to modernize and be more competitive.

So those are the five things, it sounds like 14, but it really is under five, that I would say to your constituent. And the last one, Senator, is the technology that I believe we are investing so that, that farmer can participate in America's energy future, not just for survival but can make money. I think that is the key, and I think

this is something that our programs, through the leadership of this committee, have enabled us to do.

Senator CONRAD. One last question, if I could, Mr. Chairman.

What is your forecast—you have got the experts there—in terms of trends and prices? What is the forecast for fall, as we go into fall harvest, for diesel prices?

Secretary RICHARDSON. The new Energy Administration Acting Director is here, and I would like to call him forward. Is it permissible?

The CHAIRMAN. Please come forward, and identify yourself and your office, please, for the record.

Mr. MAZUR. Mr. Chairman, I am Mark Mazur from the Energy Information Administration.

Mr. Conrad, generally for going into the fall we project prices to be roughly today's levels with slight downward trends for diesel and gasoline.

Senator CONRAD. And when you say "slight downward trend," you are talking a couple of cents?

Mr. MAZUR. A couple of cents, yes.

Senator CONRAD. All right. Thank you.

The CHAIRMAN. Thank you very much, Senator Conrad.

Senator Grassley.

STATEMENT OF HON. CHARLES E. GRASSLEY, A U.S. SENATOR FROM IOWA

Senator GRASSLEY. I have had a chance to get here late, and what I have heard is that the problems we have are Congress's fault for not acting.

And I am not here to say that Congress can't do a lot of things to help this, but I wonder if it is fair to blame Congress, if it also isn't then fair, as a matter of equity and laying everything out on the table—and this doesn't come within your jurisdiction, Secretary Richardson—but when we have pipeline and refinery problems, as we did during April and May, and creating part of the problems in June, particularly in Chicago and Detroit, isn't it fair at the same time to raise the question why the Environmental Protection Agency couldn't delay the reformulated gasoline Phase II provisions for three or 4-months to accommodate what was unpredictable at the time they initiated their regulations, when the refineries and the pipeline problems weren't there? But they did not respond with that sort of request on the part of the Governor of Wisconsin or the Governor of Illinois, as an example.

More in your area, couldn't we have seen downward trends in exploration for oil and downward trends in exploration for natural gas, and the Senate Energy Committee tells us about two-thirds of the known supply of, on-tap supply of natural gas is under Federal lands, and we have seen this trend, because so much of exploration, so much of our country has been taken off bounds for exploration. And when you have lower supply, you have higher prices, obviously. Isn't it about time that we start looking at encouraging greater exploration in the continental United States?

Secretary RICHARDSON. Senator Grassley, first let me just say that I think we need a bipartisan energy policy, and I am not here to blame anybody. I think, as Senator Lugar said in his opening

statement, I think it is important that we have joint efforts, short term and long term.

On your first point, Senator Grassley, here are the reasons for higher gasoline prices, and you mentioned two of them. The reasons are the high price of crude, and the refinery problems. You talked about the pipeline problems, the Wolverine, the Explorer problem. High demand, as I mentioned, the highest demand ever. Low inventories. Temporary market dislocation from the introduction of RFG–II into the market. And the utilization rate of refineries at about 96-percent nationwide.

Now, what I mentioned earlier, the price of Midwest gasoline has gone down substantially. Now, it is still unacceptably high. And what we are attempting to look at Senator, is the whole issue of the price differential for reformulated gas, RFG of 2- to 5-cents. And why was there such a spike at one time? I think this is the focus of the Federal Trade Commission, and they should be looking at all of these issues and reporting back to us, to you, to us, sometime this month.

Again, it is a combination of forces that have hit us all at once, and I do think we do have a policy. We have been prepared. I think it is commendable to have reformulated gasoline. That was the 1990 Clean Air Act. We all participated in that.

I think what we now need to do, Senator, is deal with this whole supply issue, this whole demand issue, find ways to increase production, you are absolutely right, domestic oil and gas production. We need to reduce our reliance on imported oil. We have proposals before you to help the domestic oil and gas producers with some tax credits. I think we need to do that. We need to find ways——

Senator GRASSLEY. But on that point, could I interrupt you? Isn't it under our law allowing the President to take certain lands out of bounds for exploration? The President can then take action to put that land in bounds, it would seem to me. I have not studied the law, but I know that it is presidential decisionmaking or through the Interior Department that, that has been done. Can't they undo that in such an emergency situation as we have right now?

I mean, are we concerned about less reliance upon importation of energy or are we not? And the extent to which we aren't, and we are always going to be terribly too dependent upon it, but we can do more, and alternative fuels are one of those, and tax credits are one. But when we aren't making adequate use of what God has given us, it seems to me we ought to.

Secretary RICHARDSON. Senator, I think we need to balance domestic production—the private market, boosting our oil and gas and our energy producers—with protecting the environment. Now, we believe that there is enough potential for exploration in existing Federal and offshore land to do the job you mentioned.

Now, what has happened a lot to our domestic producers, especially in the oil and gas area, is even though gas is at $30, you know, a lot of them are still hurting, because when it was $10 a barrel, many went out of business. Rig counts are still down. They are getting back up.

And so we think a combination of finding ways that access can be improved, making it an environmentally sound matter, getting

rid of a lot of red tape that exists there. I mentioned the importance of deep water royalty relief that we need to have extended again for natural gas.

But I think, Senator, this is why we need to make a national energy policy a priority for both sides. At the end of this session we should have a tax credit bill of initiatives that are important to you, that are important to us, so that we can get on with a long range policy that you mentioned.

Senator GRASSLEY. This is my last point. We decimated the exploration and oil drilling business. Last month the number of rigs exploring was down once again, I don't know whether down to a particular historic low. Qualified people to work in the industry are down. It is very difficult to find the type of people you need. Just the last few years of not being able to explore as freely as in the past has put us in a condition where, even if the change in policy came now, there would be a long lead time to get back to where we ought to be, to find more sources of domestic production.

[The prepared statement of Senator Grassley can be found in the appendix on page 66.]

The CHAIRMAN. Thank you very much, Senator Grassley.

Senator Johnson.

Senator JOHNSON. Thank you, Mr. Chairman. I have a markup going on right now, as we speak, dealing with CARA legislation, and it is important for me to return there, and I will be very, very brief. I would like to submit a statement, with your consent.

The CHAIRMAN. It will be accepted, and likewise Senator Grassley's statement will be published.

STATEMENT OF HON. TIM JOHNSON, A U.S. SENATOR FROM SOUTH DAKOTA

Senator JOHNSON. Very good. Thank you, Mr. Chairman. I commend you for holding this hearing today on what is a critical and timely issue.

Currently in my home State of South Dakota, gasoline prices are second highest in the Nation. It is particularly frustrating, particularly in light of recent data that has been shared with us indicating that retail prices continued to go up at the same time that wholesale prices were plummeting for petroleum in the Midwest.

These high fuel prices couldn't come at a worst time for South Dakota consumers, particularly those in our farm and ranch sector of our economy, as commodity prices have bottomed out. As my good friend from North Dakota has so ably shown with his charts, input costs continue to go up sharply while return on the farmer's labor, particularly in the grain sector, continues to go down.

This requires a long term plan, and I appreciate the discussion that has taken place here relative to a consensus that we do need less reliance on imported petroleum, but I would have to observe that we need less reliance on petroleum, period. This is a finite, nonrenewable source of energy.

There may be more that we can do to generate more production in the United States, although I think, as Secretary Richardson has ably pointed out, this involves some balancing going on. We would like to see more production. On the other hand, my constituents

are not clamoring to open up wilderness regions particularly right now, either, and there is a balancing act that has to go on there.

So long as this is a finite fuel, so long as we continue to be significantly reliant on foreign nations, we are going to continue to be vulnerable to market shocks such as we have just witnessed this year. I commend Secretary Richardson for his very hard work to negotiate with OPEC and the non-OPEC oil producing nations, Norway, Mexico and so on, that has at least begun to move us back in a better direction. But I think that we are going to continue to be vulnerable until we become far more serious than we have been with development, research and development of alternative renewable fuels, with a particular eye on agriculturally based fuels.

In my home State of South Dakota, the one area where you have an opportunity to save some money right now is to utilize the existing E–85 fuel pumps that we have positioned around the State of South Dakota. We don't have enough of them, but they pump 85-percent ethanol, 15-percent gasoline. They work very well. The experience has been good with the vehicles in our State, and you can buy that fuel for 35-cents a gallon less than standard gasoline.

So some of this is not far distant rocket science that we haven't figured out. Some of this is doable and capable of implementation on the more near horizon, and it is my hope that as we continue this debate about how better to generate a good level of continuity in petroleum production, that we also continue to become more aggressive than we have been up to now on the development of these alternative fuels.

Ethanol certainly is not the sole answer to our problems with energy in America, but it is one piece of the puzzle, and I think that we can do better in that regard. It is my hope that with the phase-out of MTBE, that we not give up concern about oxygenating fuel, and again I would hope that ETBE would be viewed as a very serious option in that regard. It has to do with clean air rather than fuel availability.

Again, I just want to share with the Secretary my concern that while we do need to continue to negotiate aggressively, I think we need to regroup in terms of our conservation strategies as well, but we need also to be thinking beyond petroleum as a source of energy in this country. And, Mr. Chairman, you have been very helpful in that regard. This committee I think has been focused significantly in that direction, but we need to reenergize that effort, given the experience we have had these past months.

And so I simply want to share that with the Secretary, and I am going to have to excuse myself for votes that I have to take in the Energy and Natural Resources Committee right now. But I do appreciate this hearing, and hopefully this will lead to a better understanding and a greater bipartisan effort on this urgent issue.

The CHAIRMAN. I thank the Senator for all of his contributions to that bipartisan effort in our committee.

And I thank you, Secretary Richardson, for coming this morning, for exploring with us as you have. I hope you will stay closely in touch, and we will be closely in touch with you, because this issue will likely increase in some intensity and severity as we have described, and the public will be asking us for answers and explanations. But we thank you for coming.

Secretary RICHARDSON. Thank you, Mr. Chairman. Thank you.

The CHAIRMAN. The Chair would like to call now the distinguished former Secretary of Defense and Energy, James Schlesinger.

Secretary Schlesinger, welcome once again to the Agriculture Committee. We have appreciated your coming before us on several occasions in the past. This is another timely appearance, and we look forward to your testimony this morning.

STATEMENT OF HON. JAMES SCHLESINGER, FORMER SECRETARY OF DEFENSE AND ENERGY

Mr. SCHLESINGER. Well, thank you, Mr. Chairman.

Let me start by joining with you and with Secretary Richardson in paying respects to Senator Coverdell. I worked closely with Senator Coverdell on the question of aid to Colombia. He was an extraordinarily good Senator, hardworking, but more important than that, he was a good man, and we shall miss him.

Mr. Chairman, you have my statement, and I shall not read it at this time. I will simply mention a few highlights.

The CHAIRMAN. Excellent.

Mr. SCHLESINGER. The first point that I would like to make, and I want to emphasize this point, is that all too frequently we use the phrase "energy policy" or "national energy policy" as a kind of incantation, as a talisman that will ward off distress in the energy area. By contrast to that, we must recognize that an energy policy will have to choose a specific goal or goals, and that means sacrifice of other objectives.

In the past, starting with the Arab oil embargo, with President Nixon's Project Independence, all through the 1970s the great stress was on reducing dependency on foreign oil imports, reducing dependency on OPEC. That has become less relevant from a national security standpoint than it was in those past decades, because of the collapse of the Soviet Union, and therefore the collapse of the Soviet threat to the oil tap in the Middle East, and also because of the Gulf War. Saddam Hussein will be the last Middle East potentate to seek control over the oil supplies of the Middle East.

That is not to say that the national security objective has gone away. Oil affects both our foreign policy and our foreign policy calculations, but it is far less serious than it was in the 1970s when there was a Soviet Union.

In the intervening years we have moved away from that willingness to use government intervention in the attempt to reduce dependency on foreign sources of supply, and towards reliance on the market. Sometimes it is presented as if reliance on the market were a free good, as it were, that solves problems. It solves some problems; it creates other problems.

Prices in the marketplace, as we have just experienced, will fluctuate, and when prices go up, consumers are unhappy, users are unhappy. When prices go down, producers are unhappy. Avoiding price fluctuations, of course, implies that one controls the market, which is the opposite direction from which we have moved.

Also, we depend upon price signals, price signals to create the new infrastructure for expanded capacity. We will not have ex-

panded capacity until those prices go up, and as a consequence, at this time we have problems with the infrastructure for our energy industries, perhaps most immediately, the infrastructure facing the electric power industry in what Secretary Richardson referred to as the "Third World" grid.

The reason that we have that, Mr. Chairman, Senator Conrad, is that we moved enthusiastically into competition in the electric power industry without considering the need for expanded capacity in the grid. And as cheap power moved around in the grid, we discovered that we were operating at close to 100-percent of capacity. If we want to move towards competition and move cheap power around the country, we have got to be prepared to take national measures to encourage strengthening of the grid.

I should mention something also, Mr. Chairman, that you and Secretary Richardson have referred to, and that is the existing problems or the prospective problems with regard to natural gas supply. We are not moving enough natural gas into storage at this time. It may or may not be a serious problem next winter. In your remarks you indicated that it could be a serious problem.

If we have a normal winter this coming winter, we are going to have serious problems with supply come late January, early February. We only are moving perhaps as little as 2.5-trillion cubic feet into storage, and that is far less than we would need to get us through the winter. It also means that we are producing less natural gas than we should, and the consequence of that is that when winter comes, we may have a problem. We should pray for warm weather.

Why are we producing less natural gas? Because the price signals earlier were not right to encourage the drilling activity that is necessary to have the degree of deliverability that is essential to have ample supplies. Moreover, we have a very high depletion rate with regard to natural gas, depletion rates of 30-percent, sometimes greater, and that means in order to sustain the present level of production, we must be finding 7-trillion cubic feet a year. That is going to be quite a major effort.

So these matters are a reflection of, in large degree, the decision to move towards reliance on the market mechanism. That has many advantages, but it does create the potentiality for price spikes.

You have discussed amply, I think, the conditions in the Midwest this year. It is plain that when the Congress passed the Clean Air Act amendments and called for Phase II of RFG on June 1st of this last year, that they did not anticipate, one, that the OPEC nations would hold down the availability of petroleum and, two, that the price signals to refiners as well as a shortage, a relative shortage of supply, would result in low operating rates of refineries.

Since oil has become available, since refinery margins have improved, the refineries are now operating at 95- or 96-percent of production. But no one could have anticipated those changes. It points to the need for careful coordination between environmental considerations and energy considerations. We sometimes make these decisions independently, and then we have reason to regret them.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Schlesinger can be found in the appendix on page 74.]

The CHAIRMAN. Thank you very much, Secretary Schlesinger. You have made, I think, an important point, that in moving toward market forces, clearly the market must see price signals, and that leads to commitment of private capital for investment and the time lag that we have discussed a little bit earlier on, that even after the investment is made, the infrastructure, the construction of this takes time, as well as the filling of the pipelines or the transmission lines or what have you.

I just query, from your standpoint, you have been involved in government in many capacities, likewise in private industry, what is the responsibility of the Government in these situations? We could, I think, take sort of a laissez faire attitude Towards that now, given this price spike in natural gas that is apparent, it probably will be clear to many companies that investments in both drilling as well as thinking through the transportation thing are warranted. Boards of directors will be committing that money. People will be out in the field doing this.

But here we are in government, people coming to Washington and pointing out that they are not only being inconvenienced but maybe severely hurt if there are shutdowns of plants due to a very severe winter, quite apart from the problems of poor people in our country. We wrestle with this question each year in terms of the home heating legislation. How much is to be appropriated for our States that are in the northern part, in particular, or for low income people everywhere throughout the country?

The market works, sort of roughly, with jerks and starts and spikes, but there are a lot of human problems here. There are a lot of people who are badly hurt in the process, and then government responds to those situations with ad hoc income supplements or strange machinations one way or another, really to ameliorate discontent.

You know, I think you are correct, that the thought of an energy policy out there that somehow guides all this is probably not an appropriate idea for a government that, after all, is so diffuse as ours in the number of responsible people. But at what point will it become more apparent, given the fact we don't have the Soviet Union and we don't have this external, to think about our own growth, our own prosperity?

And maybe this starts with the President. I suggested roughly in my opening remarks a coordinating council that somehow brings together EPA and the Department of Energy, but also Agriculture and Defense, and the President, because this is big stuff.

And without coming to that point, I think the lack of confidence of the American people in our government, whether it is the executive or the Congress or people throwing bricks at each other as to why it all failed, leaving aside private industry, vitriolic, demagogic attacks on oil barons, gas barons or what have you, we are going to go through this many, many times. So maybe it is inevitable.

But can you give us any general wisdom as to how you would begin to formulate a governmental response that takes private capital into consideration so that we get better results?

Mr. SCHLESINGER. Well, Mr. Chairman, that is a very complex question. Ideally, governments will be flexible and they will anticipate change. We have not been very good at that.

You mention a coordinating council. The administration set up the National Economic Council, and I would have thought that this energy problem and environmental problem might have fallen under the purview of the NEC. It may be desirable to have an additional body to coordinate within the Government.

The first rule, it seems to me, is that of Hippocrates, which is "do no damage," or do as little damage as possible. It is clear, I think, that we have changes in our policies that are serious changes.

For example, the Project Independence of President Nixon stressed nuclear power. In the subsequent years, to say the least, the stress on nuclear power has gone away. Both President Nixon and President Carter stressed coal conversion. In the light of change, changed attitudes towards greenhouse gases, going towards coal is less than an ideal policy, and national policy has changed as a practical matter.

But, in addition to these serious changes in policies, we change policies capriciously, and that, it seems to me, is something that can be avoided. One of the great advantages of a focus on the long run as you suggest, is that it will hold down these capricious changes in policy.

The view of the world has changed. For example, in the 1970s it appeared that we would have less natural gas than appeared in the subsequent 20-years. The industry will tell you today that we will be able to deal with our natural gas problems next winter, but the public may not like the price.

Well, it is true that prices will always equilibrate markets when they are permitted to do so. But I think that the U.S. Government might begin to look seriously at moving the 35-trillion-cubic-feet of natural gas that is up there in Alaska, starting with Prudhoe Bay.

For over 25-years, as you will remember, Senator, Congress has had the Alaska Natural Gas Transportation Act to deal with the choice of a pipeline to move that fuel down to the lower 48 States. Nothing has taken place in the early years because it was not economically feasible.

We have now reached the point of feasibility, and it seems to me that this is something that Congress can do, that government can do, and that is to smooth the path to the development of this kind of infrastructure which will, I think, be necessary, as we continue to move towards the use of natural gas in power plants, to supplement the production in the lower 48 States. I commend it to you. I commend it to Chairman Murkowski, to take a look at that issue.

Those are the things that you can do if you anticipate what will happen in the future, and we have good judgment about the longer run future, far better than short run judgment. We have good long run judgment.

I trust that, that response sort of responded to your question.

The CHAIRMAN. I think that is very helpful, and you have raised really three areas in which perhaps it would be appropriate, as opposed to lamenting the lack of an energy policy.

As you said, we have had a debate in the past on nuclear energy, and we haven't had much of a debate recently. The whole issue has been how can we store waste from the past, not do you extend or expand nuclear energy in this country. Other countries are having that debate and are expanding the use of nuclear energy.

Now, it could very well be, as we raise this, that the emotions involved in this, or the practical problems of storage of the unspent fuel and the debate we are still having over where it is to go and under what circumstances. But up front the public needs to know this is a big issue, that this is one way in which some energy might come to some parts of the country.

Another, as you say, is in the coal conversion area. Clearly, for reasons you have mentioned, the greenhouse gas debate, other environmental considerations, coal has not been favored, certainly soft coal. Some hard coal, on occasion, but nevertheless cost is involved in that, and availability. But there is a lot of coal left in the country. You know, in the same way that presumably, theoretically, the supply of nuclear energy is huge, likewise for coal.

So if we are interested on the supply side of this, those are two items which in other fora have been more or less put out of the picture of our energy debate. Now, you mentioned finally Alaska, and this, Senator Murkowski clearly would be in favor of a policy that got to the natural gas in Alaska, and in fact espouses that, has many supporters.

But that is sure to become an environmental issue, almost an icon situation. Beyond our practical aspects of that transmission, it probably is going to have to come back into debate, same as coal and nuclear, hazardous as those pursuits are, because there is a very large supply.

And, as you say, when we were having the deregulation of natural gas debates in the latter part of the 1970s, the Metzenbaum-Abouresk filibuster on the Bentsen bill, the assumption was that natural gas is so limited, that if we ever deregulated natural gas, the price would spike up and never come down. It was almost a theological view of the parties that were held at that point. Now, that has changed, thank goodness, in only 20-years.

Mr. SCHLESINGER. Those who were concerned about deregulating natural gas are now its most enthusiastic supporters because of its limited environmental effects.

The CHAIRMAN. So I have noticed. I mean there is a shift in the generation. So I think that is a helpful contribution to this hearing, that it is not just a question of gasoline spikes in Chicago. You know, the question that we are trying to look at is, is there a will of the American people, of our government, of our industry, to provide adequate supplies for the growth of this country, for the comfort of this country?

You point out correctly, as we all would, that there are tradeoffs and they involve the environment, and the environment involves the health of the American people, the well-being of people likewise. Now, these may or may not be compatible. You know, you suggested that sometimes, in your opening comments, that the tradeoffs are very severe. You finally have to choose one another.

You know, maybe it is question, I suppose, of the ingenuity of the American people that are researchers, as to how many formula-

tions we come up with that are good on supply and good on environment, good on health. I don't know the answer to that question.

This is why the biomass area, which at best, as we heard today, by 2010 might formulate 10-percent of our power, not a solution but still an incremental change that at the margins is helpful, given the big figure for energy in our country, and there does appear to be a lot of promise there of renewable supplies. And strategically, as we look at the world, we don't have the Soviet Union but we may have somebody some day, and this is a good time to put our house in order so that we do not have the perils that President Nixon and you and others faced back then.

Let me now recognize my colleague——

Mr. SCHLESINGER. Could I comment for a moment, Mr. Chairman?

The CHAIRMAN. Yes, yes.

Mr. SCHLESINGER. I strongly support the work on biomass. It is not going to be a solution for this decade, but if indeed we are able to find the enzymes that can break down cellulosic biomass, we would have a new energy option that is serious. We don't know whether we can be successful, but we should work on it.

With regard to environment and Alaska, there are two aspects. One is the opening up of the National Petroleum Reserve to exploration. That is objected to by the environmentalists, strongly.

The other aspect, which is to bring down the natural gas in Prudhoe Bay and elsewhere, we have already solved the environmental problems in the sense that under the Alaska Natural Gas Transportation Act there was chosen an Alaska natural gas transportation system that goes down the very same transportation corridor as does the Alyeska pipeline, and has all of its permits in place still after 20- or 25-years. So I think on that point the environmental issue is manageable.

The CHAIRMAN. That is a very important distinction. I appreciate your mentioning that.

Mr. SCHLESINGER. We also have, I think, the question that Senator Grassley raised about opening up additional areas for exploration. There is a clear conflict between closing off areas, particularly the most promising areas, and reducing the growth of our dependency on foreign sources of supply.

The CHAIRMAN. That is right, and there probably the American people do have to make some choices, because by and large we are enthusiastically in favor of larger national spaces, and we also are in favor of lower price of gasoline, natural gas, both, and at the same time.

Mr. SCHLESINGER. And they expect you to deliver both to them, Mr. Chairman.

The CHAIRMAN. That is right, and that is why we are meeting today, to call upon Senator Conrad.

Senator CONRAD. I thank the Chairman, and thank you, Mr. Secretary. I am struck once again how fortunate our country is to have people of your quality and ability who are willing to come to public service as you have in the past, and we appreciate that service very much.

Mr. SCHLESINGER. Thank you very much, Senator.

Senator CONRAD. You mentioned in your testimony that one place that government may have a role and a responsibility is with respect to the capacity of the grid. Could you tell us what steps you think the Congress should take with respect to improving the capacity of the grid? What are the practical steps that we need to take?

Mr. SCHLESINGER. There are two aspects of that. One is the capacity and the other is the reliability of the grid. I worry about the latter, for several reasons.

As I indicated earlier, when we moved to competition, this meant that much greater volumes of electric power would pass over the grid, and that meant that the grid would be loaded up. The electric power system is this delicate alternating current system that is always subject to instability, and a breakdown somewhere in the system may lead to a larger breakdown.

I believe—correct me if I'm wrong, Mr. Chairman—that Senator Gorton has a bill with regard to the reliability of the electric power grid?

The CHAIRMAN. I am uncertain of that, Sir.

Mr. SCHLESINGER. Anyway, that is one thing that I think that the Congress should look at very hard. Over the years since the 1967 blackout in New York State, industry has been left to worry about this problem on its own. It established the NERC in the late 1960s to worry about reliability problems, and it has served well until this much greater demand was placed upon the grid by the encouragement of competition.

I think that the Congress needs to look at that. I think the administration needs to look at that. Enhancing the reliability of the grid would be the first thing that I would worry about. I would particularly worry about it, Mr. Chairman, Senator Conrad, because of the possibilities of cyber warfare, information warfare.

The existence of the grid, the reliability of the grid, is a prime target in asymmetric warfare, as a war game of the NSA showed a few years ago, "Eligible Receiver," in which hypothetically power was shut down along the East Coast. This would have a devastating effect on the country, and worrying about the reliability of the system is particularly germane at this time.

Expanded capacity, it will come only as a result of pressure on the industry, because it is uneconomical. Once again, the price signals are not there, Mr. Chairman. It is uneconomical to expand capacity unless there is pressure to bring about capacity expansion.

Senator CONRAD. Thank you for that. Let me ask you, as I said to the Secretary, I am going to my State fair this weekend. I am going to be asked, I am sure often, what should be done?

Mr. SCHLESINGER. I beg pardon?

Senator CONRAD. I will be asked repeatedly, what should be done about the spike in prices? What would your answer be to those farmers?

Mr. SCHLESINGER. I would say several things, Senator. The first one is, I think, indicated by the dialogue between Senator Grassley and Secretary Richardson, that we probably need to have more flexibility with regard to the imposition of environmental restrictions on a particular date certain, if the circumstances, that were imagined at that date was laid down, have changed.

That has resulted in an unforeseen—largely unforeseen, there were warnings of this—but unforeseen 6- or 8-months ago, problem. And flexibility with regard to these rules I think is essential, and the Chairman's suggestion that we have a coordinating council that watches this from the standpoint of the executive office might be a very good idea.

The second thing is. It may be cold comfort in light of the charts that you showed to those who are watching the gap between input prices and output receipts increase but the fact of the matter is that last year oil prices had hit $10 a barrel, which had basically crushed the desire to invest in exploration in the world outside of OPEC and forced us to become more dependent on Middle East sources of supply, such that when demand revived, there was less spare capacity around the world.

The benefits of last year, as it were, with regard to fuel prices, are part of the cause of the high prices of this year, and we should as a country be looking at ways, in my judgment, to stabilize prices. That may include the imposition and then the reduction of taxes on gasoline, for example, such that the price is more stable than it has been. It puts a terrible burden on an independent producer, as being the most dramatic example, to have these kinds of price fluctuations while they are operating on narrow margins.

Mr. Chairman, you might think in this committee about the possibilities of stabilization of prices through the fiscal system. It would permit greater security in planning for farmers, and it would being in over time, I believe, some considerable revenue to the Federal Government that will, of course, diminish whenever prices go up.

But we are living in a peculiar period in which OPEC's strength has returned. It is sometimes said, Mr. Chairman, that modern OPEC is like a tea bag, in that it works only when it's in hot water. And when the prices of oil got down to $10 a barrel, the OPEC nations pulled themselves together, achieved the necessary cohesion to cut production. Normally, unless they are right up against it, they don't do that. Most of the time, I think, in the period ahead we are going to see lower prices than we see today.

Senator CONRAD. Thank you.

The CHAIRMAN. Thank you very much, Senator Conrad.

Let me just, without alarming the hearing by asking a question like this, when you talk about stabilizing, are you suggesting perhaps that if the coordinating council in government, including the President, said we are growing at the rate of 2-percent in our energy needs, this country, every year, and so as a result we are going to need 2-percent more of something that provides us energy.

So OPEC comes along and says, "Well, for reasons of ours, we are going to restrict so many barrels this year." And the President counters and says, "Well, if you are going to do that, we are going to release X number from the petroleum reserve, and we will sell those on the market, have revenue in our kitty back here." And then OPEC moves the other way and we move the other way. We store more in the reserve.

I mean, is this essentially the kind of mechanism that a government has, not as a countercyclical affair or to disrupt the price mechanism, but we are in that business in a way. We have this

emergency reserve, although there is argument as to the conditions under which it should be used. Secretary Richardson has touched upon this a little bit today. We are going to use a little bit of it for New England's problems, as perceived, but that is sort of an ad hoc fix of a particular geographical location. You are talking, I think, about a much broader stabilization effort.

Mr. SCHLESINGER. Yes. The reserve in New England, Mr. Chairman, is not going to do that much good, in that it is projected at 2-million-barrels of heating oil. That is trivial in relation to the total requirement. It is a gesture, and it may be a desirable gesture, but it is not going to significantly affect the market.

It would seem to me that this is an area in which we might well consider a fluctuating tariff, and particularly if the OPEC nations continue to have cohesion, which I doubt, and maintain an excessive price, that we be prepared to use a fluctuating tariff for the purpose of stabilizing prices.

The CHAIRMAN. I would just point out parenthetically, I mentioned in my opening statement we invited the Saudi oil minister to testify. He is prepared to respond to questions in writing. But one point that he and others have made, with OPEC, is that with the exception of the Saudis and perhaps slightly more capacity in Kuwait, they are already going full steam.

So, in essence, they are pointing out this is still a worldwide supply and demand problem in which they do not bear the onus, at least in their judgment, for having precipitated the prices. But it is an interesting point of view, and we will have the record replete with those thoughts.

Mr. SCHLESINGER. The Saudis, in the late 1970s and in recent years, have been amongst the doves of OPEC right now the Saudi policy is to pull that price down, not entirely for our benefit but to prevent the erosion of oil's share in the energy market.

The CHAIRMAN. We have been joined by Senator Kerrey. Senator, do you have questions of this witness, or are you prepared to let Secretary Schlesinger move on, and we would then hear from Senator Johnson?

STATEMENT OF HON. J. ROBERT KERREY, A U.S. SENATOR FROM NEBRASKA

Senator KERREY. He seems to be appealing for release.

Mr. Chairman, I just thank you for holding the hearing. It is obvious that gasoline prices have dropped a bit, from the attendance here this morning, but in Nebraska our energy price increases for a single year are in excess of about $400 million of additional payments that we just voted in the crop insurance bill, so it is a very big issue for the most important part of our economy.

And I appreciate, Mr. Secretary, your historical analysis and presentation of how easy it is for us to sort of lose sight of the fact that we still have significant dependency on foreign sources, even though OPEC has weakened, and that it is very important for us, if we want to be productive and we want to have higher standards of living, we still have to have energy to produce those higher standards of living. And we in Nebraska are very much aware of that.

Mr. Chairman, I appreciate very much your holding this hearing, and I would not ask any additional questions to Secretary Schlesinger, and look forward to the additional panel and the additional witnesses.

[The prepared statement of Senator Kerrey can be found in the appendix on page 62.]

The CHAIRMAN. Thank you very much, Senator Kerrey. I would point out Senator Kerrey was a major factor in moving the Committee toward having these hearings. He has sounded the alarm consistently, along with Senator Conrad, and I appreciate both of them participating.

And we thank you especially for coming, and look forward to seeing you again.

Mr. SCHLESINGER. Thank you, Mr. Chairman. And Senator Kerrey, may I express my and I think the country's sorrow at your retirement.

Senator KERREY. Thank you. Thank you.

Mr. SCHLESINGER. You have been a fresh breath here in Washington. Thank you.

Senator KERREY. Thank you.

The CHAIRMAN. Thank you very much.

The Chair would call now our former colleague, Senator Bennett Johnston of Louisiana. It is really a special privilege to have you, and you are welcomed by your former colleagues and your current friends, and we look forward to hearing your testimony.

STATEMENT OF HON. J. BENNETT JOHNSTON, A FORMER U.S. SENATOR FROM LOUISIANA, JOHNSTON AND ASSOCIATES, LLC

Mr. JOHNSTON. Well, Mr. Chairman, thank you very much, and thank you for the invitation to appear. And may I say, just as an aside, that daughter Sally had a little girl last night.

The CHAIRMAN. Well, this is very good news, because that is a new constituent of mine, as it turns out, without becoming very personal.

Mr. JOHNSTON. Indeed, and I am sure she will be a Lugar voter.

The CHAIRMAN. I hope so. That will be great.

Mr. JOHNSTON. Mr. Chairman, first of all I want to apologize for my written statement, which is made on my own behalf, prepared by me, as you could probably tell, which means that I don't have staff. And don't laugh, because you all will 1-day be in that kind of situation. I tell Senator Kerrey he will soon lose his staff, and it is not a very good situation when you have to do your own work, and you can see how the quality suffers.

Mr. Chairman, we have gone through another one of these same old, same old price gouging accusations of the big oil companies, and still another FTC investigation of oil, as to why these prices went up so fast. By my count, Mr. Chairman, this is the 17th investigation of price gouging. Not one, not one single one of those investigations has shown any evidence of collusion or market power or price gouging, and so this one will be.

There are, in fact, two investigations that have been done on the reasons for these prices, one by EIA, Energy Information Administration, one by the Congressional Research Service, both of which

found no evidence of price gouging. And indeed the Congressional Research Service accounted for the difference between the Midwest prices, particularly in the Chicago market and elsewhere, and virtually to the penny, and I can go into what those reasons are, and you probably, I know staff has a copy of that.

The EIA investigation talked about refinery margins being squeezed. Now, how can that be, that you can have refinery margins squeezed while at the same time oil companies are announcing the biggest profits in history? I mean, at Chevron, for example, I think we had the best first quarter that we have ever had, and yet we made no money on motor gasoline, and that is a pattern throughout the industry. How can that be?

Well, it is very, very simple. That is, you sell crude oil on the international markets at world prices and you make a lot of money on that when OPEC has the prices high. When prices are low, as they were in 1999, down around $10 a barrel, we weren't making any money on crude oil but we were doing okay on motor gasoline. And so it is that, that is the reason why, among big profits, you have no profits on motor gasoline.

Actually, historically the big oil companies, I might say, have enjoyed about one-half the profits on a percentage basis as the S&P Industrials have, and I might add, I don't know what do you tell your farmers when you go to the fair. One thing you could tell them is that crude oil is now less than half, in real terms, what it was in 1981, if that makes them feel any better. You can also tell them gasoline is now, in real terms, below where it was in the 1950s and 1960s, which we think of as the halcyon days of oil and gas. I know politically that is probably not going to sell, because people look——

Senator KERREY. You know what they will do. They will come back and tell you what has happened to the price of wheat and corn over that period of time, as well.

Mr. JOHNSTON. That is exactly right. There are problems, and you can summarize those as being supply, price, and volatility.

On the question of supply, when I was last talking about oil here in the Senate we were importing about 50-percent. We are importing 56-percent now. EIA says we are going to import 70-percent by 2020. So, Mr. Chairman, anybody who thinks you are going to reverse that trend is—I mean, I have been hearing this for over a quarter of a century. Nixon's energy independence was no foreign imports, and it is all a pipe dream. I mean, we don't have the oil and gas in this country to avoid it.

There is plenty of crude oil in the world today. You know, when you look at where it is, sometimes that is a problem: Kazakstan, the former Soviet Union, Venezuela, of course Iraq, Iran. There is plenty of crude oil, and eventually the price will elicit that crude oil to come on the market.

The problem is, of course, the price, which was $11 in late 1998, went up to $34 in March, down now to a little more than $30 a barrel, but as I say, still less than one-half what it was in 1981. The real problem with energy is volatility. I mean, that is the political problem. What is the proper price of oil? I mean, is it really $10 or $11 a barrel, as it was in late 1999? It really is not, because

if it stays there for very long, you put people, the producers, out of business, and you allow OPEC to do its thing.

Now, those who say that we don't have an energy policy and that we need an energy policy are suggesting that volatility is the problem, that it can be controlled by government, and that it is your job to control it. Mr. Chairman, I want to tell you in the strongest way possible, I have been through this.

In 1973, when I came here, and we were holding hearings on OPEC and the price of oil, this very problem, everything was regulated. Crude oil was regulated, you know, gasoline was regulated. We had all this old oil and new oil. Natural gas was regulated from the well head to the burner tip. Electricity was thought of as being a natural monopoly.

Mr. Chairman, the most controversial and difficult legislative battles I went through in all of those years were with respect to the price of energy, particularly natural gas but also crude oil. Back in those days they were seriously talking about rationing. They were saying we were going to run out of natural gas and crude oil about the turn of the century. You know, it was going to be over $100 a barrel. It was going to be just awful. And if we deregulated natural gas, Ralph Nader and his crowd said, oh, the price is going to go through the roof.

Well, Mr. Chairman, we know what happened. We deregulated, after a huge fight, and the price of natural gas went down and stayed down, and frankly until recently. It has doubled over the past year, but even so, in real terms, even at $4 an MCF, it is about 15- or 17-percent what it was, the maximum spot market price, which got up to about $9. And inflation-adjusted, it is just 15- or 17-percent what it was. Now, I think it is going up. I think we are going to have a problem with the price volatility of natural gas, for a whole lot of reasons.

But the point is, we fought all those battles, and successfully so. There is plenty of oil. There is, according to the National Petroleum Council, there is going to be enough natural gas to provide some, I think it is 34-percent increase by 2010, if we do everything right, if we allow drilling where we are supposed to be allowing it and what have you.

The CHAIRMAN. Let me just ask, if I may at this point, I hate to interrupt you, Senator Johnston, but we are in the last 5-minutes of the roll call vote. And so before any of my colleagues become anxious or I become anxious about that situation, Senator Harkin, our colleague, has offered an amendment, and that is the subject of the vote. So, if I may, I would like to call for just a short recess at this point in your testimony, where you have got us to the point that there are supplies, at a price, and then if you could pick up your thought after we return, which will be 5-minutes or so from now, I would appreciate it. Thank you.

Mr. JOHNSTON. Thank you, Mr. Chairman.

[Recess.]

The CHAIRMAN. Our hearing is called to order again, and would you please proceed, Senator Johnston?

Mr. JOHNSTON. Thank you, Mr. Chairman.

Right before you left I had stated that I believe that there are adequate supplies of oil and gas. The problem is one of volatility,

and it is a serious problem, and I think the problem is likely to get a lot more serious as we face blackouts, brownouts, rapid escalation in the price of natural gas and continued fluctuation in oil.

The question is, what do you do about it? I would say first, Mr. Chairman, that you should avoid impeding market forces. It is a great temptation. Let me give you just one example of the current solution du jour for dealing with the problem, and that is the Northeast heating oil reserve. It proposes to take 2-million-barrels, which Secretary Schlesinger says is not enough—it is a pretty good amount—but put that in a government storage.

Now, what is wrong with that? Well, first of all, heating oil has got to be turned. You can't keep it there for years like you can the Strategic Petroleum Reserve. It will chemically degrade if you don't turn it. Typically, private people turn it five times a year. The government would do so less often, probably once a year.

So the Government will go out and procure storage. Where are they going to get it? Private sector. They don't have any themselves. So they are going to take out of private sector storage the 2-million-barrels which they will buy. Then that will actually take out of use some 10-million-barrels. If they turn it five times and they have got 2-million-barrels, you take out of use 10-million-barrels in order to get 2-million-barrels of government reserves.

Then what is the Government going to do with it? Well, the Government presumably would let it go in times of high prices. Well, you can guarantee high prices because the private people who—it is expensive, you know, to procure and store, private storage. If they see the Government with 2-million-barrels out there overhanging the market, they are not going to put in their usual amount of heating oil. They are going to put in less.

So you create the shortage and then you have got to figure out how the Government is going to release it and what kind of regulations you have. I mean, are you going to let people buy it and then resell it at a higher price? It recalls the crude oil allocation problems of the 1970s.

I can predict, Mr. Chairman, it is going to be a grand and glorious mess if they do it. Looks like they are going to do it. And it is not going to work, and when it is not going to work, then they are going to say, "Well, we didn't have enough in storage, we've got to get more," which is only going to exacerbate the situation.

Same thing is true on the Strategic Petroleum Reserve. We created that for the purpose of dealing with serious supply interruptions, not price spikes. The Congress is simply not capable of setting a price which is a proper price and adhering to it. And then the market gets used to that supply, and it makes matters worse rather than better.

What can we do? Let me suggest a number of very simple things, not easy to do, maybe, but they are simple. You need to drill in those places where you can drill: Arctic National Wildlife Refuge.

I cannot understand why this Congress will not drill in the Arctic National Wildlife Refuge. There is no commercial fish there. Caribou is no problem. Right next door in the Prudhoe Bay they drilled, and the caribou population went up 700-percent. That ought to be proof enough. There is enough oil there, we think, to at least reverse the decline. We drill out in the Gulf of Mexico, which has

over 1-billion-pounds-of-commercial-seafood, great recreational areas. No recreation up on the North Slope. I can't understand why we don't drill there.

We ought to be drilling in places like, for example, Lease Sale 181 out in the Gulf; in the Destin Dome. Let me tell you, in the Destin Dome, my company, Chevron, has a lease out there. I don't know if they are going to be allowed to drill, but it is over 100-miles offshore. We think there are over 2-trillion-cubic-feet of natural gas.

Florida has said you can't drill out there, and it is due for a decision by the Secretary in, I think, next month. This being a political year and Florida being a big State, you can predict how that is going to come out. This is natural gas. It can't spill. You can't see it from the beach. It is serviced out of Alabama. And yet Florida says we can't drill there. And let me tell you, Florida is going to have a natural gas shortage.

It is simple. It may not be easy to do. Electricity, yes, I fully agree we need to go to electricity competition. Someone asked what we should do about the grid. Well, for one thing, you need to build more transmission. Transmission is about 6-percent of the cost of delivering that electricity, and yet we are woefully short on transmission facilities.

And one of the reasons is that FERC is not allowing a rate of return—actually, they haven't set the rate of return, but their administrative law judge has recommended, I think it is 9.6-cents, I think, which is not enough. You are getting more at the State level, allowed by the State commissions, than the 9.6. And they are not going to build any transmission. I mean, this is very, very bad policy, very clear. Members of Congress ought to be writing to FERC now and say give a rate of return that will bring forth transmission supplies.

As far as, I mean when you are talking about reliability, you have got to build more transmission, first of all. That is the biggest thing, because our electricity industry grew by a group of local companies which, you know, it might be State-wide, it might be multi-State, but they were local, and their reliability margins were set by their public utility commissions, and they didn't basically send a lot of energy outside of their own grid.

Now we are interconnected, imperfectly and not well interconnected, and you need to build much more of that transmission. It is going to be a very, very serious problem, the problem of transmission, as well as the problem of additional electricity generation.

One of the problems there is there are no more—you can't go out and buy a turbine now. G.E. has got all of its turbines bought up for years to come. Intergy, in a very smart move, I think, bought them all up. And so if you want to build a new gas-fired power plant, which is the cheapest and the best way to do it now, you have got to wait in line for a long time to get your turbine. So things are going to get worse in electricity before they get better.

We ought to do something about siting, siting plants, siting pipelines. It takes too long. California, let me tell you, people are pulling their hair out in San Diego now over the price of energy because they are way—the price has spiked way up because there is

a shortage of supply and there is a transmission problem. We need to speed that along, the siting.

I remember back in the 1970s I chaired a conference. The bill passed, I think, both houses, as I recall, on critical energy supply facilities, siting of critical energy supply facilities. It didn't pass, but it is the kind of thing that ought to be considered.

And, finally, there are some other things I could say, but perhaps most important, you need to pursue the nuclear option in this country. You can talk about renewables, but look, renewables are going to be a small part of the solution. Nuclear is 20-percent of our electricity now, and could be much bigger. It is nonemitting, doesn't cause any greenhouse gas problems.

And if you lose what you have now, you are going to exacerbate that natural gas price problem, because the reasonable prices for natural gas depend upon keeping your present nuclear facilities going. That could be a whole hearing in itself, of how you do that, but let me just say that is what you need to do.

So, Mr. Chairman, you are going to have political energy problems, but I would, in the strongest way I can tell you, say stick to the basic policy of market forces. We do have an energy policy which was procured at great political loss of blood, and it is called market forces. We need to perfect that, preserve that, and expand it.

Thank you.

[The prepared statement of Mr. Johnston can be found in the appendix on page 79.]

The CHAIRMAN. Thank you very much, Senator Johnston.

Let me just highlight for a moment the point you have made that volatility is the problem, and you have cited the swing in a short time from $10-a-barrel oil to $34, or $30, as it may be now, and the inadequacy of government in attempting to define what the proper price ought to be.

There is at least some more than anecdotal material that the OPEC countries, in trying to think through their policy, have come out with the thought maybe that $25-a-barrel is a proper price. Now, this may be a tactical point of view with regard to the politics of oil in the world, and pressures from our country and others may have something to do with at least a profit level that makes possible the infrastructure building for themselves or other considerations we would have in trying to bring those investments.

With Secretary Schlesinger, I pursued at the last of his testimony this thought: If we were to try to combat volatility, is it a reasonable proposition that our government would try to make an estimate of the growth of the economy or the growth of energy resources, and the two are somewhat correlated, and say that we are going to try to facilitate 2-percent growth every year? Now, in order to do that, we will need to have X number of units of energy in some form, and so we are prepared really to act as a government to try to bring that about.

I would suggest, and you mentioned a little bit in your testimony with regard to oil, if we finally come to that, that we have the Strategic Reserve, and so there would be at least the viability or a possibility of utilizing some of the strategic reserve, not with the thought of depressing the price of oil all-time, but having stated

that we are going to need so much, that we would supply that much. OPEC, others, would all know that is where it is headed, that we are not dumping the entirety of the reserve or doing something irrational.

I think you raised some very good points which in a larger hearing we would have to try to think through, that is, the distribution of this oil and physically, even if you have on paper an idea of equilibrium, how in the marketplace and given the facilities we have, all of this occurs.

And it may be that practical people will say finally, because you have suggested with regard to the New England heating oil thing, that this is not going to work. Even though it sends signals, the practical aspects of this, in this time frame and so forth, are beyond what they are going to be able to do. That may be the case.

I am just trying to get to what I think the common sense question many Americans would say, is surely there must be someone who can do something about a situation that goes from $10 to $34, that jerks all of us completely out of shape. And you may say, "Well, what's sauce for the goose is sauce for the gander."

People were suffering in oil country last year, and this year it is very high, but even then oil newsletters point out people want to make sure it stays there a while before they begin to make these sorts of investments and begin to build the infrastructure and all the rest, and it may not have lasted that long. They sort of suspect somewhere it might go down again, therefore even in these conditions the market works, but haltingly, with great reservations, with a lot of skepticism on the part of people who may lose money, who have to put the money out there.

And I am just trying to figure out, where does government or any public group come into this picture? We are all watching the drama of why people make investments, how high does it have to be, how high does it stay, while on the other hand consumers of the product all over the country come not only to Washington but to State capitals, to mayors and so forth, and demand relief, and all sorts of ad hoc solutions are a result of that.

Mr. JOHNSTON. Mr. Chairman, all I can say is, almost invariably, I will say invariably, when the Government steps in, they make matters worse.

Now, with respect to the $25 target, is it ploy with OPEC? I personally don't believe so. I think $25 is about as much as, as high as you can have without eliciting a big supply response by the world, a big efficiency and conservation response.

Now, I remember back in the 1970s when the experts came in and said that there was no elasticity in the consumption of gasoline. It didn't matter where the price of gasoline went, it is inelastic. You are not going to use any more or any less. And the problem was that they had these computer models that showed, you know, at 32-cents there is so much consumption, at 36—you remember when gasoline was 32-cents?—at 36-cents it is not that much more. Well, they were using a very narrow range.

What we found was that there is huge elasticity in consumption, but there is a big lag time. If you are driving a big SUV, I call them urban assault vehicles, you can't easily and quickly make a change to a more fuel-efficient car. But believe me, if that price

would stay up very high, $1.75, $2 a gallon, those SUVs are not going to be worth much because people are going to be getting into something smaller.

That is what happened in the 1970s. The Saudis remember that better than anybody. Not only did it bring forth conservation, huge conservation, but it also—I mean, look at natural gas consumption. It is, in the industrial sector, it is down from what it was back in the 1970s, because of conservation, not because we are producing less.

So what you have got to be able to do is sort of weather the storm and wait for the supply reaction. The supply reaction will happen, and it will happen much better than we as planners and the Government can do. Believe me, I mean, I have watched our budgets at Chevron. I mean, we had a planning budget last year of $19 a barrel, and we are still doing some additional exploration. If we thought the price was going to be up around $30, we would do much, much more in terms of exploration.

That is just one company, and I can tell you the other companies do exactly the same thing. It is economics. The market system works just like they say it does, but again, the problem is lag time.

Probably the best thing to do, you know, if you can't think of anything else, is call for an investigation by the FTC. The results are going to be predictable, but it doesn't do much harm and it is not taken too seriously by those who know about it. But if you can get by with doing that kind of thing, without really tinkering with the marketplace, you are a lot better off.

It took me a long time to come to these conclusions. I mean, I came here as a little lawyer from a medium-size town, and not knowing much about energy. I found out, in a quarter of a century, how this thing works, and the market makes it work.

The CHAIRMAN. Senator, we thank you for distilling that wisdom of the quarter century today for us, and, as always, it is great to have you here in our committee.

Mr. JOHNSTON. Thank you very much, Mr. Chairman.

The CHAIRMAN. The Chair would like to call now a distinguished panel composed of Keith Collins, chief economist, U.S. Department of Agriculture, Washington, DC.; Harry S. Baumes, senior vice president, WEFA, Inc., Eddystone, Pennsylvania; Eric Vaughn, president of Renewable Fuels Association, Washington, DC.; W. James McCarthy, general manager, Government and Public Affairs, CITGO Petroleum Corporation, Tulsa, Oklahoma; Don Hutchens, executive director, Nebraska Corn Board, Lincoln, Nebraska; and R. Skip Horvath, president of the Natural Gas Supply Association, Washington, DC.

Gentlemen, we appreciate your coming. We appreciate your patience. At this hour you are still with us, and we are grateful. Now, if you could summarize your statements in 5-minutes more or less, I would appreciate it. The statements, I will say, for all six of you will be published in full in the record, so they will be a part of our permanent record.

Dr. Collins, it is always a privilege to have you before the Committee. Will you please proceed?

STATEMENT OF KEITH COLLINS, CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE

Mr. COLLINS. Thank you very much, Mr. Chairman. On behalf of USDA, we appreciate the opportunity to participate in your hearing today on energy issues. In my 5-minutes I would like to make five points.

Point number one is that U.S. agriculture uses a lot of energy in a lot of alternative forms. Each year agriculture accounts for about 2-percent of the energy use in the United States. Diesel fuel is the largest energy input among the direct uses of energy, and fertilizer the largest among the indirect uses of energy.

An important trend in American agriculture has been that energy efficiency has been steadily improving. Farm output per unit of direct energy used has increased 60-percent since 1980. Now, that means that agriculture is less vulnerable to energy price shocks than it was back then, although it is still vulnerable. It also means that agriculture is making an important contribution to energy conservation, and I think it illustrates Mr. Johnson's point about long term price elasticities of energy demand in agriculture.

Point number two: The energy price increases this year are reducing farm income, and this is coming from two different sources, on the price side and on the cost side. When a consumer spends $1 on food, about 8-cents goes to cover transportation and energy, for those energy and transportation costs after the commodity leaves the farm.

These marketing costs are increasing the business costs, the operating costs, of processors and transporters and so on. And what they do, then, is they will pass forward to consumers and back to farmers those costs in the form of lower prices being bid at central markets, and as well higher basis or even lower prices in more remote farm markets.

At this point we don't see a whole lot of price effects; we are mostly unable to measure price effects because of all the other factors that are going on right now that are affecting prices at the farm. However, I would note that truck rates have risen for moving some agricultural commodities, but spot rail and barge rates are actually lower so far this summer than they were a year ago.

Well, in addition to the reduction in farm revenue, net farm income is also reduced by higher farm production expenses on energy. When a farmer spends $1 on total production costs, about 3-cents goes to direct fuel and oil costs. This year we expect that is going to rise to about 4-cents, which would be the highest rate since 1986. In dollar terms, this translates into direct fuel expenses being $8.1 billion this year. That is up $2.3 billion over last year. That is a 40-percent increase.

Thus far, prices of indirect energy inputs such as fertilizers and chemicals have not changed very much. We do forecast a small increase in expenditures on those inputs. However, as natural gas prices and oil prices remain elevated, the higher production costs will be for chemicals, fertilizers, machinery, custom work. Things are going to get reflected into the prices farmers pay for those inputs down the road.

Point number three: In the short term, farmers can do little to avoid these higher fuel costs, and these costs will reduce farm in-

come dollar-for-dollar. However, over time, particularly if the high prices persist, there are a number of strategies that farmers can employ to reduce the impacts, including planting less energy-intensive crops, using alternative practices such as reduced tillage, contracting fuel supplies, storing fuel, investing in smart and energy-efficient machinery and buildings.

Point number four: The higher energy prices and the impending large corn crop are expected to increase the demand for ethanol this year, reduce ethanol's production cost, increase ethanol profitability. This is going to increase incentives to expand ethanol production capacity, and that is going to make more ethanol available to replace MTBE and help solve the water contamination problem, and it should help make more ethanol available to be blended with conventional gasoline as well as an RFG to help solve the Nation's tight gasoline supply problem.

Point number five: On the farm program side, I can report that USDA and DOE are working together to implement the President's Executive Order 13134, as well as your bill, the Biomass Research and Development Act of 2000.

I am also pleased to report that we have about completed our proposed rule on the bioenergy program which Secretary Glickman announced several months ago, under which the Commodity Credit Corporation would share input costs with ethanol and biodiesel processors. We plan to send that rule to the FEDERAL REGISTER late next week. And I also report that we are about complete with our solicitation, as required under our appropriations bill for FY 2000, that will allow us to take applications for biomass pilot projects up to 250,000 acres on CRP land.

We are optimistic that bioproducts and bioenergy will become an important new income opportunity for more and more farmers as we move through this decade, as well as reduce the national dependence on fossil fuel.

And that completes my statement.

[The prepared statement of Mr. Collins can be found in the appendix on page 106.]

The CHAIRMAN. Thank you very much, Dr. Collins.

Dr. Baumes.

STATEMENT OF HARRY S. BAUMES, SENIOR VICE PRESIDENT FOR INDUSTRY AND AGRICULTURE, WEFA, INC.

Mr. BAUMES. Mr. Chairman, it is a pleasure to be here this morning to talk about energy issues in agriculture, and I am sorry, but I must digress a little bit because I am especially happy to be here this morning, because I took the train down from Philadelphia. I missed your opening comments, and one of the reasons, not one but the reason I missed your opening comments was that we had an electrical problem with Amtrak and the train broke down outside the BWI station. So I am very sensitive to blackouts and power outages this morning.

I am happy to be here, though, to share my comments on energy issues in agriculture. Many of my comments will mirror Mr. Collins'. I would like to focus my remarks on four areas. One is direct usage of energy inputs in agriculture, production agriculture in particular; indirect usage of energy inputs in production agri-

culture. And then discuss very quickly the short-run implications, and longer-run implications as well.

In the farm operation, whether crops or animal production, farmers demand energy inputs for different types of energy inputs, different types of production activities. Planting, harvesting, primarily require diesel fuel or fuels to operate equipment. Electricity powers irrigation systems milking parlors, air conditioning and dryers. Natural gas and liquid propane powers dryers too. Gasoline, diesel, and lubricants are necessary to run equipment.

In the aggregate, farmers expended on direct energy inputs an average of over $9 billion per year between 1996 and 1999. By my calculations, that is nearly 5.5-percent of total cash expenses and about 5-percent of total production expenses. Estimates of energy expenditures on cash costs are expected to rise considerably for the year 2000.

By my estimates, we are looking at a rise in direct energy costs of close to $2.5 billion, pushing the figure to almost $12 billion for the year 2000. Total cash expenses are also estimated to rise, but at a slower rate, so as a consequence we are looking at direct energy costs to increase their share of total cash costs to about 7-percent from 5-percent.

If we look at individual crops, direct energy costs expended by farmers on corn per acre have averaged somewhere between $24 to $25 per acre, according to USDA estimates and WEFA's estimates over the past 4-years. That is about 15-percent of variable cash expenses.

Soybeans is not as energy-intensive, takes about $6 to $10 in direct energy expenses, only 7-percent of variable cash expenses. Wheat is similar in terms of absolute magnitude. It requires about $10 in direct energy costs and it accounts for 14-percent of cash expenses.

So, as Mr. Collins said, energy is a major input and clearly an important factor to agriculture production, and as these costs rise, the farmer has very little opportunity to adjust and his returns are adversely affected.

Indirect usage by agriculture reflects the amount of energy consumed in production of manufactured inputs, primarily fertilizers and pesticides. Farmers use millions of tons of fertilizer and millions of pounds of pesticide. Fertilizer production, particularly nitrogen production, is extremely energy-intensive.

Anhydrous ammonia, the primary feedstock to produce fertilizers, nitrogen fertilizers, is also a product used by farmers. Every ton of ammonia produced in the U.S. requires somewhere between 33- to 34-million BTUs of natural gas. For the past 4-years the price of natural gas has been fairly stable and energy costs in ammonia production have accounted for 75-percent of the total production cost.

Now, more recently, energy prices facing the fertilizer producers are closer to $4 per million BTU of gas, and this has raised the cost considerably. In the absence of being able to pass these costs on to farmers or to buyers, 15- to 20-percent of the U.S. ammonia capacity has shut down in response to these higher gas prices.

Energy-intensive fertilizers and crop chemical costs account for about 43-percent of the variable cash expenses for corn production,

35-percent for wheat production, and 40-percent for soybean production. Couple these with the direct energy costs of 10- to 15-percent for these crops, and you can clearly see that energy is an important input to agriculture.

In the short run, the farmer has little opportunity to adjust. He has to "suck it up," in the vernacular. He has to pay higher costs for his diesel fuel, and operate, and that will directly affect his bottom line. In the longer run, when a farmer can alter his production schedule, change his complement of energy inputs, move to alternative or less energy-intensive crop production or animal production, he can ameliorate or mitigate some of the costs of higher priced energy.

Mr. Chairman, this concludes my comments this morning. I would be happy to answer any questions the Committee may have.

[The prepared statement of Mr. Baumes can be found in the appendix on page 97.]

The CHAIRMAN. Thank you very much, Dr. Baumes, and we are grateful that you made it despite the hazards of energy in your transportation this morning.

I am delighted that Eric Vaughn is with us again. His association with renewable fuels obviously strikes a chord with many of our members, as has been mentioned today, and we look forward to your testimony.

STATEMENT OF ERIC VAUGHN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, RENEWABLE FUELS ASSOCIATION

Mr. VAUGHN. Mr. Chairman, we always strive to strike chords, so it is once again an opportunity I greatly appreciate to appear before you and your committee.

My name is Eric Vaughn. I am the president of the Renewable Fuels Association. We are the national trade association for the domestic ethanol industry. There are 61-ethanol-production-facilities. Probably the finest ethanol production facility, though, is in South Bend, Indiana, New Energy Corp.

Over 600-million-bushels-of-corn are going to be processed into ethanol this year. According to the Energy Information Agency, for the past 9-months we have hit record production levels. This past month 110,000-barrels-a-day of ethanol were produced.

The great news, in addition to all that, is that since 1990, the passage of the Clean Air Act Amendments, the domestic ethanol industry has doubled in size, and some 600,000 farmers today own and operate ethanol production facilities. Again, we have doubled in size since 1990.

I listened this morning, and always, Mr. Chairman, coming before your committee is an education. I wasn't certain we were in the Energy Committee—excuse me, the Agriculture Committee—all morning long.

I have noted with some degree of real satisfaction that virtually every major environmental, agriculture, and energy issue that has affected renewable fuels, ethanol, biobased diesel, has started, has gotten its push, and has been supported by you, Mr. Chairman, and this committee, not the Environment Committee and not the Energy Committee, not to slight them for not being here, but it is you and your committee.

It was the clean octane amendment that was added to the 1990 Clean Air Act amendments, the only amendment, by the way, that passed on the floor that year, that instructed the oil companies to begin to use alternative sources of clean octane and not ever-increasing levels of aromatics. There was a huge outcry of support for that at the time, because it was just about that time, almost exactly 10-years ago, that we were in the Persian Gulf.

In fact, August 2nd, coming up, is the 10-year anniversary of that activity.

There was a tremendous amount of interest in energy security, energy policy, and energy prices, just like we are facing today. But instead of beating your chest, instead of giving long-winded speeches, this committee took action, and you, Sir, are to be congratulated for that action.

But you didn't stop there. A couple of years later you worked very closely at lifting the oxygenate cap that EPA imposed. You also worked with the Environmental Protection Agency to try to adopt a carbon monoxide credit for these alternative fuels and their use in reformulated gasoline. You have worked aggressively to promote tax policies, and are to be specifically congratulated for your co-op provisions in the tax provisions that helped to develop these co-op operations and activities all across the country.

And now you are working again on biomass provisions, and you are to be congratulated for the work that you are doing not to just talk about energy policy but to produce results, and results that we are already beginning to see in many of our ethanol production facilities.

You haven't stopped there, though. This committee has been very busy. You are now working with the Environment and Public Works Committee to try to fix the problem of MTBE in reformulated gasoline. It is not an easy fix, as you know. You have been the principal cosponsor of two major legislative initiatives, and I daresay to you and members of this committee who have put the bridge together, you are bridging between the East and West Coasts, where MTBE is so dominant, and the Midwest where ethanol is so dominant, and attempting to bridge the differences, concerns and problems associated with Federal reformulated gasoline regulations.

But you are not simply looking at MTBE, you are also taking a very honorable position in trying to make sure there is no backsliding, a critical component of this program. That was the intent of the Clean Air Act Amendments in the first place.

What does all this have to do with agriculture and farmers and this committee? Everything. Six-hundred-million-bushels-of-corn have been processed. We have doubled the size of this industry. Mr. Lugar, we have doubled it because of leadership like yours and members of this committee.

The recent run-up in gasoline prices across the country frightened, angered—frankly, there are words I can't use in open public committee about what they did to members of our industry, angering our industry because many people in the oil business blamed ethanol, blamed the ethanol industry for the run-up in prices. In 12-months conventional gasoline prices in Chicago ran up 29-per-

cent, while reformulated gasoline prices went up 34-percent. MTBE prices went up 30-percent. Ethanol prices remained steady.

We have oversupplied for this market. We have over a quarter of a billion gallons of excess capacity today, ready to meet the demands of reformulated gasoline. And this industry is now looking at gasoline prices, both conventional and reformulated gasoline with ethanol, at 92-cents wholesale today. We didn't run the prices up, Mr. Chairman, as you know, and unfortunately I can't claim credit for running them down, but I have three very quick recommendations.

Number one is supply management. The oil industry today has adopted a just-in-time delivery mechanism, which essentially means about a two-day supply. While I am not calling for regulations to increase that supply availability, the oil industry should be prodded, maybe encouraged by this committee and others, to adopt a more reasonable plan of action in terms of supply. Maybe 4-days of supply, just to help smooth out some of those rough edges, especially when it comes to prices.

Second, environmental regulations, we still have a North and South reformulated gasoline program. We ought to have one national reformulated gasoline program. It would help out tremendously. And, Mr. Chairman, while the Federal Environmental Protection Agency, after 5-years, has issued a Notice of Proposed Rulemaking on a CO credit, it is inadequate, it is not worthy of the action that this committee has put toward that issue, and needs to be strengthened.

And, finally and lastly, with your leadership on renewables, we need a renewable energy program. And while I would be the last to admit, unfortunately, for some in this room, that renewables can't make a huge impact, it is making an impact and a positive one toward energy security, environmental security, and agricultural security all across the country.

Again, I appreciate the opportunity to be here, Sir. I look forward to your questions.

[The prepared statement of Mr. Vaughn can be found in the appendix on page 90.]

The CHAIRMAN. Thank you very much, Mr. Vaughn.

Mr. McCarthy.

STATEMENT OF W. JAMES MCCARTHY, GENERAL MANAGER, GOVERNMENT AND PUBLIC AFFAIRS, CITGO PETROLEUM CORPORATION

Mr. MCCARTHY. Thank you very much, Mr. Chairman. I am Jim McCarthy, and I head up the Government and Public Affairs for CITGO Petroleum Corporation. According to the latest available data, CITGO is the second largest marketer of gasoline in the United States, with about a 10.3-percent share. We do not do any exploration and production, and we also do not own or operate any CITGO retail sites. Those are all independently owned by local business people.

I too am pleased to be here, to have this opportunity to speak about the overall issue of providing energy that is so critical not only to the American farmer but also to the economic well-being of our country. We empathize with those families whose household

budgets felt the impact of the rapidly rising gasoline prices, and it is our sincerest hope that a sound, cohesive national energy policy emerges from hearings such as this, because what America does need is an energy policy that ensures the quality of life that the American people expect and deserve.

Unfortunately, it is our opinion that Americans' ability to have dependable supplies of transportation fuels when and how they want it is in jeopardy as a result of our regulatory policies. The situation that we saw earlier this summer is a classic case of the relationship between supply, demand, and resulting price.

In a free market system, the price of a commodity like gasoline is not so much a factor of the cost of manufacturing but rather the relationship between the consumer's demand for a product and the manufacturer's ability to supply it to the marketplace. The current situation, the price of gas in the Midwest was driven up by the inability to manufacture and distribute it to the marketplace to meet that consumer's demand. Once again, the consumer paid the price, the hidden price, of the impact of the regulatory policies, primarily driven by the EPA.

I know you are familiar that both the recently released June 5 DOE memorandum and the June 15 Congressional Research memorandum attributed the price swings to five major factors, so I won't go into them.

However, clearly refiners' crude costs have gone up the equivalent of 30-cents per gallon over 1-year ago today. We had exceptionally low inventories which were drawn down, in order to turn our tanks, or in order to meet the new lower Phase II RFG program restrictions, and that was the only way to bring the new product to the market. There was an unusual rash of operational problems. Refineries, pipelines, and even marine channels were under—could not be fully utilized because of these operational problems.

I am sure you are familiar that a recent Federal court ruling gave Unocal a valid patent on a blend formulation, which quite frankly caught the industry off guard and caused RFG production to be scaled back, further restricting our production.

And, finally and most importantly, and the point I am trying to make today, is the inescapable fact that there are too many fuels out there, not just a North and a South fuel, but this summer alone there are 13-grades-of-gasoline, making about 39-different-types-of-gasoline that we have to deliver over the summer.

Now, this is being manufactured and delivered in a system that was basically designed for six different fuels, so the strain on the system is incredible. We have a patchwork of fuels that unintentionally constrains refiners' ability to manufacture and then supply the fuels that are mandated by the various governments.

About 30-percent of the gasoline sold in the U.S. is RFG, including the Midwest markets in Chicago and Milwaukee. In those markets, however, we do not use MTBE, but rather we do use ethanol, and this means that the RFG that we utilize around the rest of the country cannot be moved in to meet a short demand, because we have to have a special blend stock called RBOB. This RBOB was more difficult to manufacture than any of us had anticipated, and so supplies were exceptionally low. Nevertheless, the marketplace

did take over and the supplies of RBOB were brought in and the price came down.

The important point is that this is a recurring theme around our country. As local regulators have created new and different gasolines, refiners no longer have the flexibility to quickly shift supplies to the area of greatest need. The result is situations that previously we could have corrected very quickly, and no longer can do in the same time frame. It takes longer to turn these products, create the products, and then ship them to where they need to go.

This summer's price/supply situation is not the first occurrence and we do not believe it will be the last, unless our industry's warnings are heeded. Similar situations occurred in 1989 with the advent of EPA's RVP program; again in 1991 during Phase I of the Reformulated Gas Program; again in 1999. According to industry experts, we are in a nightmare of patchwork environmental regulations which are wreaking havoc with gasoline supply and price stability, and we agree with that point.

The important point to recognize is that the root cause stems from the unfortunate fact that this Nation's only energy policy appears to be, at least from a petroleum perspective, driven by the Environmental Protection Agency. And in reality it is not a policy at all, but rather a hodgepodge of regulations which has changed every year since 1970, when the Clean Air Act was originally passed.

And it appears that unfortunately there is no end in sight. Our industry is already faced with the next wave, EPA's requirements for ultra-low sulfur gasoline and the diesel specifications. CITGO is concerned that the EPA again is not listening to the warnings, and that there will be shortages again , causing price spikes, as a result of the recent Tier II gasoline regulations and the sulfur regulations for diesel. Unless EPA changes its approach, we will see more and greater price spikes.

Meeting the new gasoline regulations will cost about $8 billion for our industry, and will present significant challenges to our engineering abilities. Because it is high capital cost, it is likely that some refiners will be unable to justify that investment and will simply shut down that particular stream. This will tighten supply.

Others, however, have already said that due to the high cost of conventional desulfurization technology, they will try new but unproven technologies to reduce sulfur content of fuels. These new technologies will be less costly but will have limited commercial experience, and will likely result in initial operating problems, which will further tighten supply and cause price spikes.

In addition, in order for us to meet the 2004 deadline required by the EPA, the industry will face significant hurdles just to obtain the necessary permits, to put together the necessary engineering and construction resources and hardware to get it done in time. If EPA somehow does not properly facilitate the permitting, or if other regulations, such as the proposed diesel sulfur regulation or the ban on MTBE, overlap this Tier II work, then we are clearly on a course for disaster.

I have additional concerns about EPA's proposed diesel fuel sulfur rule, which carries a $10 billion price tag. Specifically, whether it is even possible to provide the needed supplies of diesel within

the 15-ppm sulfur level cap imposed within the rule. With the current distribution system, it will be extremely difficult to deliver this fuel with 15-ppm to the consumer.

The problem is that the new diesel must share the same distribution system with other products that will have significantly higher sulfur levels. More fundamentally, due to the cost to produce the 15-ppm sulfur diesel, many refiners, once again, will drop out of that marketplace, and we know what will happen. This could drastically reduce the supply of diesel, and supply disruptions will occur, and once again, price spikes.

The bottom line is that the diesel sulfur rule is being proposed with a number too low, and the timing is far too soon. Similar health and environmental benefits can be obtained with a more reasonable 50-ppm sulfur cap.

Nevertheless, EPA has arbitrarily selected standards for the proposed diesel sulfur without the technology to support the standard. In summary, the automobile engine manufacturers don't have the after treatment technology to meet the standard, and the oil industry doesn't have the desulfurization technology to manufacture it in a cost effective manner.

Even more importantly, next year EPA plans to propose another rule to lower the sulfur content of off-road diesel. Here again, due to the manufacturing, supply, and distribution issues already mentioned, the supply of off-road diesel will drop and prices will increase, specifically for the agricultural community.

In my written testimony I have provided what we think are the solutions to this particular situation, and they are very basically six.

Number one, regulations must address greatest environmental and health concerns first.

Number two, regulations must be based on sound science and current data.

Number three, regulations must carefully balance the total anticipated cost of compliance, both capital and maintenance, over a specified period of time, against the anticipated benefits over those same time frames.

Number four, the regulated community must have a more active role in setting the priorities.

Number five, regulations should set performance requirements but allow for creative, innovative solutions as well as sufficient lead time.

And, number six, each regulation should include an automatic sunset provision that can be overridden if necessary.

With that, I will close my remarks, and I look forward to your questions. Thank you very much.

[The prepared statement of Mr. McCarthy can be found in the appendix on page 121.]

The CHAIRMAN. Thank you very much, Mr. McCarthy.

Mr. Hutchens.

STATEMENT OF DON HUTCHENS, EXECUTIVE DIRECTOR, NEBRASKA CORN BOARD

Mr. HUTCHENS. Chairman Lugar and Members of the Committee, thank you for the opportunity to put a farmer face on this issue, and we do appreciate that opportunity.

I have got to tell you that my name is Don Hutchens and I represent 30,000 corn farmers in the State of Nebraska, but I am also knee deep in this industry of agriculture, because I am also a producer. I try to spend my weekends, but anymore it is difficult to spend weekends on the farm when your neighbors are stopping by and asking the very question that Senator Conrad has to answer when he goes home to the North Dakota State Fair.

I was also looking forward to having Senator Kerrey here, because it was 18-years ago when a younger farmer in my community met up with a young Senator, then running for Governor, so it is a pleasure for me to cross paths with him again in his waning months of his term here in Congress.

When I came into State government when Senator Kerrey was Governor, it was in the mid-1980s, and it was a very difficult time for agriculture, as you well know, Senator Lugar. But I continue to farm with a 91-year-old father, who probably saw times that make these times pale in comparison.

And as I was sitting listening to the testimony today, I thought of the two happiest times in my father's life dealt with energy, and it was when REA put electricity on the farm, and when he could finally sell the horses and buy a gas-powered tractor. He is still on the farm. He uses diesel, and he is still actively in the field, not as much as he would like. But I think it is interesting, the changes that we have seen in production agriculture as it relates to energy.

I want to compliment this committee on what you have done in the past in addressing farm legislation that would put $5.4 billion in market loss payments in farmers' pockets. My concern, though, Senator, is that $5.4 billion, in comparison to the numbers that ERS have put together, may be lost this year just in the having to pay for those increased energy costs. That means that $5.4 billion isn't going to go to capital costs. It is not going to write down operating loans. It is not going to flow through the economy the way it normally would, and it is not going to put kids through their education.

Nebraska farmers have been hit extremely hard. In fact, my farming interests lie in the southwestern part of Nebraska, where the drought is the most severe across the corn belt. Those farmers are using more energy, and they have no choice but to continue to use energy in the production of our State's leading crop, and that is corn, because if you don't produce, you don't qualify for crop insurance. And right now the only way that you can really come out of the program is farming for the loan deficiency payments, so we have to crank out every possible bushel that we can, so it hits Nebraska farmers extremely hard.

And the sad part about it is that the consumer will not help us incur those costs, because you and I will not pay a penny more for a pound of meat or a loaf of bread, because we have that inability in agriculture to pass those costs on down to the consumer.

In Nebraska, and you have heard the statements on energy prices so I won't repeat those on diesel, propane, and gasoline, but in Nebraska we have 79,000 wells. And I will give you an example, that our normal irrigation cost per well would be about $2,200. Given the fact that we have already pumped, about 3-weeks ago, as much as we normally would all summer, our potential costs on those irrigation wells are going to move to about $6,600 per well. You do the math. We can eat up, Senator Lugar, the $390 million of market loss payments very quickly.

Some comments made about our already practices in energy conservation with new equipment, new farming practices, even using genetically modified crops to reduce applications in fields. But I can guarantee you that it has been the American farmers that have paid for those costs, and as we talked, and it was mentioned earlier that we can adapt new farming practices, we can, but it comes at a cost. And you know it is energy, it is fertilizer, and it is seed and it is chemicals that capture the majority of the costs for farmers.

The next issue I want to mention, because it is the most recent one, the thought process in the country has moved away from gasoline and diesel, even though it is a major concern and a major draw on our financial capabilities, but now it has moved to natural gas. Predominantly, natural gas is the predominant product within anhydrous ammonia, and you know this fall and this spring farmers will use over 4-million-tons-of-anhydrous-ammonia. Your State, Illinois, Iowa, Nebraska, we use about 50-percent of the anhydrous ammonia in agricultural production.

My numbers say that anhydrous ammonia per ton has risen from about $140 a ton to about $270 a ton over the last year. Farmers are going to find it very difficult to absorb energy costs and fertilizer costs within the same growing season.

My fear is that we are on the brink of another financial disaster in agriculture, and I don't want to sound just like the issues that farmers always bring to the table, so I guess I want to draw some potential solutions to that. Eric Vaughn is probably one of the most adequate spokesmen for the ethanol industry, and so I yield that he has given most of that information to you over the past.

But 99-percent of the farmers tell us they find it so ironic that, as big energy users, we can't find the opportunity to use more and more corn in the production of ethanol. And I think you have stated in the past that there is probably higher cost to a barrel of oil than maybe the $30 that we recognize.

Also, there is an opportunity to expand the production of natural gas, and whether it is additional drilling here in the United States or importing additional reserves of natural gas, we should do everything possible in that vein.

Expand the market for biodiesel. Biodiesel and ethanol together helps. As Eric mentioned, we are not going to solve the energy problem with using agricultural products, but we do play a larger role in that.

Expand the breaks for farmers to adopt new technology that uses less energy. One that hasn't been mentioned here today is more research and understanding of carbon sequestration. Can we pay farmers a green payment, or can we pay them to store carbon and help in the aspect of cash flow?

And then, as was mentioned here by the last testimony, an aspect of sulfur in diesel, I believe that you can find some advocates who will work with you in saying that maybe 15-ppm is too low, and it is going to transfer some additional costs onto production agriculture that we can't bear at this point in time.

There is a number of other areas. I would like to also mention that Senator Conrad's question of what do we tell the American farmer out there, I haven't heard the right answer yet this morning in Secretary Richardson's or Schlesinger's comments, with all due respect.

There is also one other way, Senator, that we address the problems of higher energy costs for agriculture. We can do it in the energy arena, but we also have to do it in the aspects of farm policy that provide farmers the capability of tolerating periods of higher energy prices, and we are going to have to look at some alternatives or some additions or improvements on foreign policy that will add to the ability of farmers to pay for higher energy.

Thank you for the time, and I appreciate the opportunity.

[The prepared statement of Mr. Hutchens can be found in the appendix on page 134.]

The CHAIRMAN. Thank you very much, Mr. Hutchens.

Before I call upon you, Mr. Horvath, let me mention that on the Senate floor I have just been advised that the Senate Democrats have objected to a committee's continuing to meet. They have got that right. Therefore, we have been advised that the hearing should conclude. So the formal part of the hearing will conclude. I will ask the recorder to cease recording.

[The prepared statement of Mr. Horvath can be found in the appendix on page 138.]

[The prepared statement of Mr. Eischens can be found in the appendix on page 144.]

[Whereupon, at 12:10 p.m., the Committee was adjourned.]

A P P E N D I X

JULY 20, 2000

Senate Agriculture, Nutrition and Forestry Committee

Chairman Dick Lugar, U.S. Senator for Indiana

U.S. Sen. Dick Lugar delivered the following opening statement today at a Senate Agriculture, Nutrition and Forestry Committee hearing on energy prices and agriculture:

Are Americans prepared for the inevitable consequences resulting from the lack of a strategic energy policy?

Does an energy policy exist with our government or private industry that will guarantee adequate energy supplies for a growing American economy? And if not, who will tell the American people that we are headed for lower growth in jobs, income, comfort, standard of living and competitive position in the world?

Our nation is facing an emerging energy crisis. Demand for energy is rapidly increasing and supplies may not be emerging to meet that demand, even at high prices. We are here today to assess present energy policy and to determine if amendments to our energy policy are appropriate. In addition to high prices at the gasoline pump, Americans have been alerted to possible shortages of natural gas as well as electrical brown-outs.

In reviewing our energy policy, we must consider the fact that events beyond our borders have tremendous impact on American energy security and environmental interests. As economies of the developing nations continue to grow, so will their demands for energy. Such growth will fuel the greenhouse gas problem and increase world dependence on Persian Gulf Oil.

OPEC decision - making is a major factor. I invited the Oil Minister of Saudi Arabia, Ali Al-Naimi to participate in today's hearing. He is unable to attend due to previous commitments, but I have submitted nine questions to the Minister (which will be included in the Committee record), and have requested his written response to those questions.

Economic growth in the U.S. has produced a tight market for many forms of energy. Electricity demand in the first half of 2000 is up 3 ½ to 4 % from the previous year. Over half the increase in world oil demand from 1998 to 1999 was attributable to increased U.S. demand for oil. The price of natural gas and diesel have risen dramatically due to increased demand, tight supplies and low inventory.

We know that the United States needs to build new power plants but current plans are for these plants to be fired by natural gas. Are natural gas supplies adequate to meet the demand? At the federal level, are we doing enough to address the transmission problems that could be associated with increasingly deregulated electricity markets?

The Energy Information Administration forecasts that demand for natural gas is likely to increase by nearly 2 % per year over the next twenty years. Energy security expert Daniel Yergin asks whether we are prepared to make the investments in exploration, new pipelines and distribution facilities needed to meet this rapidly growing market.

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At the same time that demand for energy is growing, new environmental regulations are being imposed upon energy facilities and fuels. Many of these policies are needed to produce a cleaner environment. The reformulated gasoline program is one example.

We also need to assess our energy research and technology policies in light of the greenhouse gas problem. I have cosponsored Senator Murkowski's legislation to further the growth of new energy technologies.

Senator Daschle and I introduced a bill to solve the MTBE problem and triple the use of renewable fuels by 2010. We have introduced a market trading system that will allow oil companies to produce renewable fuels in the areas of the country where they can be most economically marketed.

President Clinton recently signed into law my bill to establish an aggressive research, development and demonstration program to make it easier to convert biomass into ethanol. Since biomass feedstocks tend to have very low costs, this new program could lead to dramatic reductions in the cost of making ethanol.

One additional idea which I believe needs to be considered is the creation of a Presidentially-led energy and environmental security task force to coordinate our environmental and energy security problems. Such a task force should include the representatives from the National Security Council, the Council of Economic Advisers, the Department of Agriculture, the Department of Energy, the Environmental Protection Agency, the Department of Transportation, and the Department of Treasury.

I thank the witnesses for coming today. I now turn to Senator Harkin for his opening remarks.

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Opening Statement of Senator Tom Harkin

Senate Committee on Agriculture, Nutrition, and Forestry

Hearing on Energy and Agriculture

Mr. Chairman, I want to thank you for calling this important hearing on energy policy and the impact of high energy prices on American agriculture. I have been working on these issues for some time. In March, I sent a letter to Secretary Richardson and Secretary Glickman, and I am pleased by their decision to form a working group to examine the implications of high oil prices for farmers. I have also been very much involved in getting to the bottom of the exorbitant increases in gasoline prices in the Midwest.

Farmers have a lot at stake with respect to energy costs and our national energy policies. Even though farmers have greatly increased their energy efficiency, they are still highly vulnerable to energy price increases - especially when their financial circumstances are already very tight, as they are now. USDA estimates direct fuel expenses for farmers will increase by $2.5 billion, or 40 percent, this year compared to 1999. Higher energy prices are also reflected in greater costs for grain drying, fertilizer and pesticides. The Iowa Farm Business Association estimates that higher energy costs will add more than $1,300 to this year's expenses for a 660-acre corn and soybean farm. So any actions that can be taken to alleviate the impacts on farmers would certainly help.

Frankly, though, I see agriculture much more as a solution to our energy challenges than as a problem area. We have barely scratched the surface of the potential for agriculture to supply domestically produced, renewable and environmentally friendly energy. Renewable sources now constitute only 3 percent of U.S. energy supplies and only about 1.2 percent of our gasoline. But our reliance on foreign petroleum is growing dramatically, to the point that we now import around 60 percent of our petroleum. And we're now far more reliant on foreign petroleum than we were back in the 1970s when disruptions in oil supplies caused tremendous shocks to our economy.

Renewable fuels like ethanol and biodiesel enhance our energy security, improve the environment, increase farm income and create jobs and economic growth, especially in rural communities. Ethanol use already adds about 20 cents a bushel to the price of corn. Replacing MTBE with ethanol would add another 14 cents to corn prices and increase farm income by about $1 billion a year. There is tremendous potential also in biomass such as switchgrass and in wind energy, which is a growing industry in Iowa. Hydrogen used in fuel cells will allow efficient use of biofuels, and storage and transportation of wind and solar energy.

If renewable energy is going to have a chance to get a footing and grow, it will have to be given an opportunity to do so. That is why I was so outraged by the efforts to lay the blame for high Midwest gasoline prices on clean air rules and the use of ethanol. The facts now show that blame was unfounded and unfair. But this experience is a harsh lesson in how hard we will have to continue to fight for increased use of renewable fuels.

Thank you, Mr. Chairman.

OPENING STATEMENT OF SENATOR CRAIG
COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY
HEARING ON ENERGY AND AGRICULTURE
July 20, 2000

Good morning and welcome.

I also recognize our distinguished former colleague, Senator Johnston. It is a pleasure to see you and have your testimony here today as we examine the impact on agriculture of higher crude oil prices. Welcome also to Secretary Richardson, former Secretary of Energy, Dr. Schlesinger, and our distinguished panel.

Information from the American Farm Bureau

Federation shows that U.S. agricultural production is very energy intensive, with fuel and oil costs constituting 30% of the typical farm's petroleum bill and oil-based fertilizers and pesticides constituting 70%. That 30% cost is felt almost immediately, but the manufactured fertilizers and pesticides lag until later.

Thus, farmers are hit doubly hard and yet have virtually no way to pass on the higher oil costs of either variety. If the current $28 dollar a barrel price holds for the year 2000, USDA's projected Net Farm Income of just under $50 billion will have to be adjusted down to near $47 Billion. Another disastrous year for our farmers has been made even worse by the Clinton-Gore Administration's bad energy policy.

Of course, tight oil supplies and high prices due to the OPEC cartel's manipulations are nothing new. In both 1973 and 1978, we had "oil shocks" from over-dependence on OPEC cartel crude, a situation made much worse by wrong-headed Federal oil price and allocation regulations.

That period is remembered for the nationwide scarcity of gasoline, diesel and home heating oil-- causing incredibly long gas lines, farm tractors running on empty, and cold homes across America. In 1981, newly-elected President Ronald Reagan abolished oil price and allocation controls and let the free market operate to maintain oil supply at reasonable prices.

However, the Clinton-Gore Administration's chronic and continuing lack of a National Energy Policy designed to supply America's energy needs has again brought us hat-in-hand to the doors of the OPEC cartel.

Today, we are more dependent on imported oil at 56%, than we were in 1973 at 35%. By the year 2020, this figure could reach 65%. Certainly, little relief from tight supplies and high prices can be expected by begging the oil cartel for mercy, when they know we are addicted to foreign oil and have no currently available alternative sources of petroleum.

It is fair to ask how and why we are again under OPEC's thumb. We have had gas prices exceeding $2.50 a gallon in the Milwaukee/Chicago region. Recently, the

press reported on DOE Policy Director Melanie Kenderdine's June 5, 2000, Memorandum to DOE Secretary Richardson, in which the policy director listed about nine reasons for tight gasoline supplies causing these extremely high Midwest gas prices.

One major reason was difficulties in complying with EPA's reformulated gas mandates. However, the Kenderdine Memo did NOT at any point implicate the oil companies for price gouging or profiteering.

Nevertheless, Vice President Gore and EPA Administrator Browner accused "big oil" of price gouging and profiteering on June 21, 2000.

On July 14, 2000, *Washington Times* **reporter**

Patrice Hill's front page article on the Kenderdine Memo revealed that both President Clinton and Secretary Richardson publicly claimed that the price spikes were suspicious; that three Federal investigative agencies are investigating oil companies for collusion and price fixing; and that the Federal Trade Commission is also investigating.

This activity was all ordered AFTER the June 5, 2000, Kenderdine Memo, and in spite of the fact that DOE's spokesman, Drew Malcomb, said the Kenderdine Memo was written for Mrs. Browner to help her decide the Milwaukee RFG waiver requests. Speaker of the House Hastert's letter to Administrator Browner properly condemned this attack on the oil companies as a coordinated White

House strategy to deflect blame to the oil companies. I completely agree with Speaker Hastert on this point.

You know, we should not be surprised that Clinton-Gore Administration actions and policies purposely operate to make oil scarce and oil prices high. Vice President Gore stated in his book, *Earth in the Balance*, **that his objective is to eliminate the internal combustion engine by the year 2017–a goal he reiterated in the foreword to the reissued 2000 edition.**

Indeed, Administrator Browner apparently agrees with Mr. Gore, since she reportedly performed the major research for *Earth in the Balance*, **when she served as Senator Gore's Legislative Director in the United States**

Senate from 1988 to 1991.

Mr. Chairman, the Clinton-Gore Administration has made the imported foreign oil problem much worse. It has locked up Federal lands from promising fossil fuel exploration and development. It has burdened farm and industry with onerous energy regulations–all at enormous cost to Americans at all income levels in money, time, and convenience .

The Clinton-Gore administration has so conducted foreign policy that members of OPEC, some of whom who owe their very existence to our military and other assistance, attempt to bring us to our economic knees over oil.

Because of the Clinton-Gore Administration's demonstrated extremism on national energy policy, it is necessary that the Congress set the agenda for such a policy. To that end, I have co-sponsored Majority Leader Lott's bill. S.2557, the National Energy Security Act of 2000.

I will be working with the Leader and my other colleagues in the Congress to enact a national energy policy that provides farmers with energy resources in sufficient quantities and at reasonable prices necessary to perform their vital functions for America.

Thank you, Mr. Chairman.

STATEMENT BY SENATOR J. ROBERT KERREY

Implications of high energy prices on U.S. Agriculture

Agriculture Committee

July 20, 2000

First, I would like to start off by thanking Senator Lugar and Harkin for holding this hearing. In Nebraska there are few topics that are more important to producers than the impact higher energy costs are having on their livelihoods. I know that every member of the Senate Agriculture Committee is hearing from people at home on this issue and I look forward to the thoughtful and insightful testimony of the witnesses.

Higher energy prices threaten to cripple America's agriculture economy. I am afraid that a combination of continued low commodity prices and higher energy costs will depress farm income and further weaken producers. This problem comes at a time when the agriculture industry is far more energy efficient than during the oil shocks of the seventies. However, even with gains

in energy efficiency, agriculture is still a high energy use industry, susceptible to higher production costs. Steep increases in the price of diesel and natural gas are eating into the cash flow of producers. Fertilizers made from natural gas and irrigation pumps powered by diesel engines are more costly to use than in previous years. As these costs climb, I am afraid that many in agriculture will see their incomes continue to fall.

On a recent tour of Nebraska, I saw the effects of both high energy prices and drought conditions on the spirits and profits of Nebraskans. The dry weather is something that producers realize is from time to time an inevitable aspect of farming, however, the higher prices for their irrigation systems and trucks is truly disheartening. I spoke with livestock producers who are paying an additional $50 dollars a truckload to cover higher fuel costs. Higher natural gas prices are forcing Corn and Soybean farmers to budget an additional $60 dollars a ton for anhydrous ammonia. The Department of Agricultural Economics at the University of Nebraska estimates that higher diesel prices will cost Nebraska

producers an additional $75-100 million for irrigation, tillage and harvesting. These are just increases in operating costs - agriculture still faces the same higher gasoline prices that cause the rest of us to clamor for relief.

Mr. Chairman, I know the testimony provided today will help us to understand the impact of higher energy prices on the agriculture economy. I would also hope that the assembled witnesses outline ideas as to where we can go from here in handling future energy increases. I want to talk about the potential good news of developing an energy policy that continues to strengthen our capacity to develop renewable energy resources produced in the U.S. Less than 2% of America's gasoline supply is provided by ethanol. I frankly believe that this number should be higher, not just for ethanol, but for other renewable fuel sources.

Renewables, however, are but one part of an energy strategy. I believe that we must also encourage the domestic production of other energy sources, such as natural gas. As Americans we

respect and embrace the market. Market forces will continue to have an impact on energy costs. What America's energy policy must accomplish is developing the capacity to respond to market forces and minimize costs. Until this is accomplished, America's producers and consumers will continue to pay more for their energy needs.

Finally, let me extend a special welcome to one of our witnesses. Don Hutchens, of Geneva, Nebraska is here in his capacity as Executive Director of the Nebraska Corn Board. My relationship with Don stretches back to when I was Governor and I asked Don to come work in the Nebraska Department of Agriculture during another difficult time for producers. Don has worked tirelessly to improve the lot of the Nebraska farmer and I look forward to his testimony, and to hearing from all of our witnesses.

Chuck Grassley

Statement for Ag. Comm. hearing on energy prices

Mr. Chairman, I would like to thank you for this extremely timely hearing. Seemingly, while the Clinton/Gore Administration has allowed us to plummet into what I would consider an energy input cost crisis, the Department of Energy has lethargically reacted to the problems at hand.

Now we are facing a situation in which many family farmers, who are dependent upon LP gas for drying their grain, will be subjected to some of the highest prices we have witnessed this decade. This of course is in addition to the gasoline, diesel, and natural gas prices which have already shot through the roof.

Since last summer, diesel prices in Iowa have increased nearly 40% and liquid petroleum has increased 55%. These increases are outragous considering the vital interest in the health and well-being of the agricultural economy and the transportation industry in Iowa. As everyone here should know, the soaring cost of diesel, LP, and natural gas has an especially detrimental effect on farmers and truckers, who's livelihood is tied closely to input costs.

When considering the family farmer's plight, high fuel costs impact every bushel of corn, soybeans or any other agricultural product produced across our country. For instance, analysts in Iowa estimated that last year, grain farms spent $4,000 for fuels and oil. With this years' increase, that cost rises to $5,500, or an increase of $125 per month.

The same analysts estimate that the increased fuel costs will add $1.00 per acre for diesel, and $2.00 per acre for LP input costs in 2000. With the tight margins farmers are already experiencing, did the Department of Energy consciously decide to force family farmers out of business or is this just a side effect of the ineptitude that has been demonstrated when dealing with this problem.

To make matters even worse, recent increases in natural gas prices could soon double, if not triple, home heating bills this winter. Yesterday, the Department of Labor reported that natural gas prices shot up 7.8 percent just last month. Eighty-one percent of Iowa's homes are heated by natural gas.

Earlier this month, I expressed my concerns to President Clinton and Secretary Richardson regarding the inadequacy of natural gas supplies to meet this winter's demand. I have not yet received a response to my concerns, and I assure you I will take advantage of this opportunity today to discuss this matter.

Mr. Chairman, in February of this year, I began warning my constituents that all consumers would eventually feel the far reaching effects of the current energy crises. In fact, rising oil and natural gas prices are primarily responsible for the 0.6% increase in the Consumer Price Index report released yesterday. I believe that this Administration needs to take a much more active role in remedying this energy input cost crisis. The time for sitting by the wayside and watching energy costs rise needs to end.

PREPARED STATEMENT OF
U.S. ENERGY SECRETARY BILL RICHARDSON
BEFORE THE SENATE COMMITTEE ON AGRICULTURE,
NUTRITION AND FORESTRY
JULY 20, 2000

Thank you for giving me this opportunity to speak with you about the near- and long-term ways we can improve America's energy security. I would also like to address the alternative opportunities we now have -- specifically in biofuels, on which your Committee has worked very hard -- which can help ease our nation's excessive dependence on fossil fuels.

ADMINISTRATION ENERGY POLICY

Mr. Chairman, we both have opportunities to answer the nation's energy challenges. My responses to the energy issues of this year have been grounded in the Clinton-Gore Administration's energy policy. This unwavering policy is based upon several principles, and focuses serious attention on ensuring our energy security. We believe in:

- market forces -- not artificial pricing;
- diversity of supply and strong diplomatic relations with energy producing nations;
- improving the production and use of traditional fuels through new technology development;
- diversity of energy sources, with long-term investment in alternative fuels and energy sources;
- increasing efficiency in the way we use energy; and
- maintaining and strengthening our insurance policy against supply disruptions – the Strategic Petroleum Reserve.

Mr. Chairman, as you know, we are seeing some recent signs of encouragement in our oil and gas markets, thanks to our adhering to this policy.

GOOD NEWS ON PRICING

The Energy Department's Energy Information Administration reports that regular gasoline has dropped almost fourteen cents per gallon since this time last month, nationwide. This is good news for American consumers.

And as you know, diesel is in the same "family" as heating oil – and we are concerned about heating oil supplies for the upcoming winter. We need to build stocks, so this is creating some price pressure on diesel, which affects our nation's farmers and truckers.

But we do have some good news. According to EIA, retail on-highway prices for diesel are down about two cents in just the past two weeks, nationwide. In the Midwest, diesel is down three cents over that period.

Part of this relief stems from our work of the past seven months, when we moved vigorously to boost supply. As you know, I've talked extensively with oil producing nations. OPEC and other producers have heard our concerns and have twice boosted their output. We now believe the markets have signaled a need for yet more oil and we welcome signs that OPEC governments are willing to respond

to those signals – and that some members are considering other increases. We hope they continue to keep an open mind.

Our latest data shows that there are roughly 3.5 million barrels per day more oil on the market than during this time last year. That is a welcome addition to the world market, and is exerting downward pressure on gas prices.

But we can't claim victory. Regular gas is, on the average, around 38 cents more expensive than it was at this time last year.

This is mainly because we have simply not been able to replenish stocks as demand continues to soar. Unfortunately, we see no chance for alleviation any time soon. The world demands larger and larger quantities of oil -- and even the addition of 3 million barrels per day cannot assuage this exploding demand.

Mr. Chairman: we need to exercise longer-term solutions. We need to not only ease this demand, we need to ease America from its dependancy on imported energy resources.

MEETING DEMAND: THE BIOENERGY SOLUTION

President Clinton is committed to such a vision, introducing proposals to boost domestic production, spur energy efficiency, and increase the use of alternative energy resources.

We have extensive energy opportunities in the field of bioenergy. Mr. Chairman, I know that this issue is of great personal interest to you, the Committee, and to your constituents. Examples of your leadership in this area include:

- this Committee's previous hearings on the importance of biofuels;
- your attendance and presentation at the signing ceremony and subsequent hearing on Executive Order 13134, "Developing and Promoting Biobased Products and Bioenergy"; and, most recently
- passage of the Biomass Research and Development Act of 2000, signed by President Clinton on June 22nd, 2000.

Finally, I would be remiss if I didn't acknowledge your role in aligning the research programs at the Departments of Agriculture and Energy in this extremely important area.

Bioenergy resources already meet more than 3 percent of our nation's energy requirements, and consumption has been rising by 2 percent annually since 1990. But even this growth cannot meet our rapidly expanding concerns on air quality, climate change, dependence upon foreign energy supplies, and the sluggish economic conditions in the nation's farm and forestry sectors.

If we are to see a meaningful decline in our future reliance on fossil fuels; if we are to lessen our vulnerability to interruptions in energy supply; if we are to kindle a whole new field of agricultural and forestry economics, then we need a cooperative national effort to develop a range of renewable energy sources. Bioenergy can be at the heart of such an effort.

Creating such a vigorous market will dramatically increase demand for dedicated energy crops – providing new revenue streams for farmers, and new cash-flow for rural economic development. The current uncertainties on the farm and in our forestry industry could be dramatically eased by long-term energy crop contracts with biorefineries. This is the focus of the bioenergy initiative: integrating the existing bioenergy and bioproducts programs within the energy Department and the Department of Agriculture. In fiscal year 2000, we awarded more than $18 million dollars in contracts to promote the biorefinery industry.

And new crops, new planting, and new harvesting technologies can better farmers' use of marginal lands, while helping preserve the ecosystem. Better forestry management can improve the health of our nation's woods -- while reducing the danger of fire. And our investments in new bioenergy technologies can boost profitability for U.S. firms competing in global markets.

Mr. Chairman: there are also ample opportunities in wind power, which I know is of interest to the Committee. I spoke a moment ago of new crops and new planting helping boost revenues and increase the use of marginal lands. Wind – one of earth's fundamental resources – can further that progress and prosperity. Of the top 15 wind resource states, 12 are located in America's agricultural heartland.

To take advantage of this, in June of 1999, I announced the Wind Powering America Initiative – which challenges the nation to harvest enough of this area's vast wind resources to generate just 5 percent of America's electricity needs. Just 5 percent will return economic benefits of over $60 billion dollars. [One good example, Senator Harkin, is Storm Lake in your home state of Iowa -- which has developed the world's largest wind farm. Total annual payments to landowners in that area are already $500,000 dollars and will continue over 20 years. Imagine what we can do nationwide.

Mr. Chairman, I want to take a moment to commend you for the bill you forwarded to make sure we take aggressive action on the promise of bioenergy. As you know, we have been working under the President's Executive Order – for Developing and Promoting Biobased Products and Bioenergy – since August if last year. That Order set a goal of tripling the use of bioenergy in the U.S. by 2010. We can get there.

We have already established the National Biobased Products and Bioenergy Coordination Office, and have produced our first integrated, multi-agency strategic plan for biofuel and biopower research. Our FY 2001 budget includes substantial increases for biofuels and biopower – $49 million at the Department of Energy, and $44 million at the Department of Agriculture.

With your bill's enactment, we have taken an important step toward that goal. The world is demanding more energy. It is wise that we position America's farmers as the suppliers to meet that demand.

We would like to ask that this Committee lend its support to our R&D budget requests, so that we can make our research plans a reality and meet our goal of tripling the use of bioenergy in the U.S.

ADMINISTRATION ACTIONS FOR AMERICA

Mr. Chairman, the Clinton Administration has taken other steps during this year to ensure America has the energy resources it needs.

You remember the heating oil shortfall we had this spring. To meet it, the President released nearly a third of a billion dollars in the spring, to help low income families pay their heating bills. He asked for $600 million dollars more in Low Income Housing Energy Assistance funds, which Congress provided in the Emergency Supplemental Act of 2000.

And as you know, the President has also proposed the new heating oil reserve. Of course, you need to think creatively when it's 90 degrees here in Washington. But when winter comes, we will be glad that we took this unprecedented step to help the American family stay warm through winter.

We also addressed the issue of supply, through increased support for tankers; Small Business loans for distributors; and encouraged refiners to ramp-up their production.

We're helping independent oil producers test new production technologies, and giving a hand to small producers who are already in the field. And our ultra clean fuels program is helping refiners adhere to the new EPA tier II rules as these rules go into effect over the next few years.

But still, America, and the world, are demanding their fossil fuel. Refineries in the U.S. are working at 96 percent – and at full capacity in the Midwest. Demand right now is absorbing nearly all of that. But I think, in time, we will see the price pressure eased a bit.

But there is still more that we can do to get relief to consumers.

Mr. Chairman, last month, President Clinton sent a letter to Senate Majority Leader Lott, urging that the Congress work with the Administration to enact the President's pending energy proposals without delay.

A central mechanism in the President's energy initiatives is a $4 billion dollar package of tax incentives to encourage domestic oil and gas production, and for consumers to purchase more efficient cars, homes, and consumer products. This plan has idled on the Hill for two years.

The President has also continually requested increased investments to meet our energy needs. In FY2001, the President advanced a $1.4 billion dollar investment for Energy Department programs in:

- energy efficiency;
- renewable energy;
- natural gas; and
- distributed power systems.

The Senate should be commended for supporting 97 percent of the Department's FY 2001 budget for renewable energy resources, an increase of $50 million dollars above the final House mark. I hope that the Senate prevails in budget reconciliation deliberations before the Conference Appropriations Committee.

And the Department is urging Congress to appropriate our entire request of $154 million dollars for our Weatherization Assistance Program in 2001. This will be a step towards full restoration of this vital program that reduces the heating and cooling costs of low income families by an average of $200

dollars per year, thus helping them cope with the high prices of fuel that they – of all Americans -- are least able to afford.

Also of concern, the Congress has postponed action to extend the Energy Policy and Conservation Act, which authorizes two central components of our nation's energy security: the Strategic Petroleum Reserve and our participation in the International Energy Agency.

The President also submitted the Comprehensive Electricity Restructuring Act two years ago. Congress has not yet enacted a bill.

Mr. Chairman, it is no longer a question of "if" the electric utility industry is going to change. It is "when." I know that this issue is of particular interest to rural communities, and to the farming sector.

Mr. Chairman, we need to act on this issue now. I have crossed the country talking to Americans, warning them about brownouts this summer. Power went out in the San Francisco bay area last month when temperatures soared. And three weeks ago, utilities in New England and on the West Coast were stretched to the limit as a one-two punch of hot weather and the unexpected loss of several power plants nearly brought on blackouts.

Mr. Chairman, these are our actions -- both performed and proposed -- to respond to the energy issues encountered this year. We have seen some success, and I believe that is based on our adherence to the Administration's informed energy policy. But we have a lot more work to do. I am ready to work with you to get it done.

STATEMENT OF JAMES SCHLESINGER
BEFORE THE
COMMITTEE ON AGRICULTURE, NUTRITION & FORESTRY
UNITED STATES SENATE
20 July 2000

Mr. Chairman, Members of the Committee:

I thank the Committee for its invitation to appear before you today to discuss the nature of current energy policy and its implications. In the time available, needless to say, I can only touch on a few highlights.

I start with the nature of energy policy, which is frequently misunderstood. The phrase "energy policy" is all too frequently used as a kind of incantation—or free floating talisman which will miraculously, if one happens on the right energy policy, somehow preclude any distress about energy supply or price. By contrast, the reality of energy policy is far less benign and not lacking in pain. One needs to define one or two objectives, map out a program that presumably will achieve those objectives—and then accept the consequences, which means accepting the higher costs in other areas for pursuing those objectives. Thus, those other areas become secondary to the main objectives.

The oil embargo of 1973 drove home to this country its dependency on foreign sources of energy supply. After the start of the embargo, national energy policy came to be focused primarily on reducing the nation's vulnerability to oil supply cutoffs. This started with President Nixon's Project Independence and continued through the Carter years. Other objectives, including environmental objectives, remained important but were frequently sacrificed to the main objective. Elements of those programs were fuel switching, conservation, and developing alternate (preferably domestic) sources of

supply. By the early eighties, dependency on foreign sources of supply had been substantially reduced—though that outcome depended to a large extent on the fortuitous start up of production in Alaska and the reduction in demand induced by OPEC's higher prices.

During the Reagan years, government intervention in pursuit of reduced vulnerability to supply cutoffs was generally abandoned. Our energy policy became one of reliance on the market—with the Strategic Petroleum Reserves serving as a hedge against supply cutoffs. That willingness to accept dependency on overall market forces became increasingly justified by the events of the 1990s. Specifically, the collapse of the Soviet Union largely removed a major threat to the security of the oil tap in the Middle East; the defeat of Saddam Hussein in the Gulf War substantially eliminated the possibility of a hostile local potentate achieving control over those Middle Eastern oil supplies. Thus, events substantially reduced the national security motivation for interference with market forces.

On the economic side, the collapse of OPEC after 1985 was also reducing the economic threat. In the 70s, an arrogant OPEC appeared to be both a permanent and dominating monopoly. Since the 80s, OPEC has been substantially tamed, most dramatically so compared to the 1970s, by recognition that their market power can rapidly be undermined by too high prices.

National energy policy today accepts the primacy of market forces. (Indeed, we make that acceptance more than a necessity but a virtue as well. Our foreign policy emphasizes, if it does not trumpet, the need for other nations to embrace the benefits of free markets.) Yet, reliance on market forces has its consequences. Prices will

fluctuate—in accordance with supply and demand. Consumers love free markets when prices are stable or declining, but they grow resentful when prices rise.

In addition to a general reliance of market forces, environmental goals have become an increasingly critical element in national energy policy. Included amongst such elements are greater specificity regarding the quality and type of fuels to be burned—which reduces flexibility and thus the ability of the market to respond to local imbalances. There are also restrictions on the areas that can be drilled, significant monetary costs in avoiding environmental damage in those places that are drilled, and barriers to the use of nuclear power. Indeed, it has been said, with some justification, that the most important legislation on national energy policy is the Clean Air Act and Amendments. It should also be noted that the Kyoto Protocol, if it is ever seriously pursued, would have an even more dramatic effect on national energy policy.

Both the dependency on market forces and the impact of environmental regulation have been dramatically illustrated by the recent difficulties in energy markets—and by the additional difficulties that we may anticipate in the months ahead. The shrinkage of Asian economies and Asian oil demand after the financial collapse in 1997, followed by OPEC's "error" in raising production led to burgeoning inventories of oil and a collapse of oil prices to around $10 a barrel. Low oil prices resulted in a shrinkage of investment activities by oil companies, which increased world dependence on OPEC sources of supply with the revival of demand. By March of 1999, the OPEC nations had been so badly burned by low oil prices that to the surprise of many they achieved the cohesion necessary to cut production and subsequently inventories. Over time that has led to a tripling of crude oil prices. Shrinking crude oil inventories and weak margins led to

reduced refinery operations. Since the spring of this year, oil supplies have increased and refineries have been operating at 95-96 percent of capacity. Gasoline inventories are slowly being rebuilt to normal levels. But in the interim, limited inventories associated with high demand have resulted in higher gasoline prices. The disruption of the market has been intensified by the legal deadline to start Phase II for Reformulated Gasoline (RFG) on June 1st. Inventories of Reformulated Gasoline have been especially low. Prices have risen to equate available supply against high demand. Such developments underscore the necessity for careful coordination of environmental and energy policies.

In parts of the Midwest, the problems posed by RFG have been reinforced by state preference for using ethanol as an oxygenate. This has meant that it was not possible to move additional supplies into the affected areas because the rest of the country used MTBE as an oxygenate—thereby limiting additional supplies from the outside. Pipeline breakdowns also added to the problem. Happily these special problems in the Midwest are now being alleviated. Nonetheless, the overall gasoline supply situation remains tight—and will do so for the balance of the summer driving season.

OPEC and its somewhat erratic behavior impose instability on the international supply of oil. Nonetheless, we can readily draw on that supply. By contrast in the case of electric power and natural gas supplies, we are dependent on domestic infrastructure (for which there is no alternative to government regulation) and largely on domestic supplies. Consequently, those energy markets are subject to disruptions, which seem likely to intensify in the future. Such markets consequently appear particularly appropriate elements for national energy policy.

To the extent that we impose specific supply rules that reduce market flexibility and to the extent that there may be inadequate infrastructure or production capacity, one should not be surprised that that will result in temporary supply dislocations in the marketplace. What has occurred of late results from our national decision to rely primarily on market forces—which from time to time inevitably will inflict pain on energy users.

Thank you for your attention. I shall be happy to take any questions that the Members of the Committee may have.

STATEMENT OF
J. BENNETT JOHNSTON
Thursday, July 20, 2000

Mr. Chairman, members of the Committee. I am pleased to accept your invitation to speak on current energy problems. I hasten to say that my testimony is my own, unfortunately, unaided by staff, and is not that of The Chevron Corporation on whose Board I serve.

Every evening on television we are regaled by charges of "price gouging" by big oil companies. Numerous members of Congress echo the charge, and Chairman Henry Hyde has procured an FTC investigation on the issue.

Well, the price of gasoline has doubled in many areas in the last few months while oil companies profits are at their highest levels in years. Ergo, gouging has been proved. Case closed.

H.L. Mencken said that for every complicated problem there is a simple solution and, "it is always wrong." Few subjects have received as much distortion, misrepresentation and hypocrisy as has fuel pricing. The current FTC investigation is, by my account, the 17th investigation since 1973. (See attached list) Not one of these investigations has found evidence of price gouging and so it will be with the current investigation.

There have been two investigations undertaken by federal authorities on the subject of current energy price escalations: one by the Energy Information Administration of the Department of Energy on the subject of "Rising Crude Oil in Gasoline Prices" and the other by the Congressional Research Service on the subject of "Midwest Gasoline Price Increases." Neither found evidence of oil company gouging.

The Congressional Research Service Report of June 30th, 2000 focused in detail on the Midwest gasoline price increases. The Report noted that wholesale prices in the Chicago markets began to decline during the week of June 19th and have fallen by 40 cents per gallon since. However, the earlier price discrepancy between the Midwest and the rest of the country which varied between 42 to 59 cents could be identified as to cause.

> **"Contributors to the higher prices appear to be the high price and low supply of crude oil, problems at two pipelines supplying the area with gasoline, the use of ethanol-only formulated gasoline (RFG) in Chicago and Milwaukee, and apparent concern among refiners regarding use of a Unocal patent for making RFG."**

The Report was also able to allocate the full amount of the difference to specific causes.

> **"About 48 cents of the current gasoline price is likely due to higher crude oil costs. That affects gasoline consumers everywhere. It can also be roughly estimated that about 25 cents of the regional price increase is due to transportation difficulties. As much as another 25 to 34 cents, roughly estimated, could be due to the unique RFG situation in Chicago/Milwaukee. The term 'unique situation' refers to the combination of limited supply, the choice of ethanol for use in the area's reformulated gasoline, and RFG transportation problems."**

On June 29 the Director of the petroleum division of the EIA testified (regarding their report) before the Senate Government Affairs Committee that the crude oil price rise was "the result of a shift in the global balance between production and demand," and that "...in 1999 crude oil prices rose faster than product prices, squeezing refinery margins."

If this is so, how do we account for higher oil companies profits? Very simple. It is because these profits were made in the "upstream" part of the business. Crude oil was produced (for the most part abroad) and sold into the world market at higher world market prices. At Chevron, for example, we had the best first quarter profits in years, but made virtually nothing on the sale of motor gasoline.

Historically, oil companies profits have not been up to standard. From 1994 to 1998 oil company profits have averaged 7.2 percent, about ½ of the 14.2 percent overall average

for the S & P Industries and in 1999 fuel producers averaged 11.1 percent versus 17.1 percent for the S & P Industrial average. And even with higher crude oil prices of late, the price/earnings ratios of major oil companies have lagged behind-- compare Chevron and Texaco at price earnings ratios of less than 20 to Microsoft (with all its problems) at 49.

PROBLEMS IN ENERGY

The gasoline problem in America is easing--the retail price of gasoline dropped for the second straight week to $1.625 per gallon as of July 3rd according to EIA.

But real problems remain: supply, price and volatility. These problems are related and relative.

On supply, the bad news is that America's oil imports are increasing--from about 50 percent when I retired from the Senate four years ago to 56 percent today. And according to EIA, imports will be 70 percent by 2020. The good news is that there appear to be adequate reserves of crude oil worldwide for the foreseeable future.

On price, the bad news is that crude oil prices have tripled--from $11 in late 1998 peaking at $34.13 on March 7 and is still about $30. Natural gas prices have doubled in the same time frame. We can take some solace, though perhaps not much politically, from the fact that crude oil is less than one-half the $70 inflation-adjusted price of 1981, and natural gas is less than 15 percent of the inflation - adjusted peak spot price of the 1970's.

OPEC can, and is, effectively controlling the price of crude oil by limiting supply. The artificially high OPEC prices of the 1970's produced massive worldwide conservation and production and drove the price of crude oil down by more than two-thirds. And it will happen again. But it takes time.

The problem that is perhaps the most difficult of all is volatility. Doubling the price of gasoline to $2 dollars per gallon is a real problem for the tight-budgeted owner of a 12 mpg SUV. Changes to more fuel efficient cars cannot be made rapidly--or cheerfully.

In my opinion, energy is likely to again emerge as a front-burner issue, as it was in the 1970's. Currently, the problem is gasoline prices. Tomorrow, or sometime soon, it will be blackouts and brownouts from electricity shortages and disruptions. Next winter escalating natural gas prices may be a real problem for the consumer. Indeed, natural gas price rises may plague us for years to come as its constrained supply is assaulted by increasing demand for clean-burning fuel for electricity generation. The question is, how will the Congress react to these problems?

COMPETITIVE MARKETS ARE THE SOLUTION

When I came to the Senate in 1973 virtually every form of energy was highly regulated. Natural gas in the interstate markets was controlled from the well head to the burner tip. Crude oil was similarly regulated, and electricity was thought to be a natural

monopoly. Other laws and regulations that would make Rube Goldberg blush were enacted, such as the Fuel Use Act to prevent the burning of natural gas under boilers, the Small Refinery Bias, The Windfall Profits Tax, and the Synfuels Corporation.

These regulation produced a real energy crisis. Hundreds of thousands of American workers were laid off because of natural gas shortages, gasoline rationing was seriously proposed and so-called experts were predicting that natural gas and crude oil would be depleted shortly after the turn-of-the-century.

Undoing these laws and regulations and installing free market rules in their place required a series of legislative fights that were the most controversial of any that I was involved in, in 24 years in the Senate. And in each instance, the regulators predicted disaster, and in each instance they were wrong--totally, completely, demonstrably, wrong. Today, many of those who say we don't have an energy policy seem to suggest that we should in fact install a policy that eliminates price volatility--a policy that controls prices and supplies. To those, I say we have tried that, and the results were disastrous.

Today's energy policy--market competition--should be retained and protected. Indeed, it should be expanded to include competition in retail electricity.

The temptation to "do something" is politically tempting. As long as it is only another investigation of the oil companies, it probably does no real harm although the results are predictable.

What does do harm is assaulting the free market. A good example of such a proposal is the "Northeast Heating Oil Reserve."

The high heating oil prices in the Northeast last winter were caused by a temporary shortage in supply. Those higher prices in a free market will elicit more supply and, in time, lower prices.

Some members of Congress and the Administration propose a 2 million barrel heating oil reserve. This sounds good, as most regulations do, but it will have exactly the opposite effect. It is an expensive proposition to purchase and store heating oil. Suppliers will, therefore, be induced to lower their own supplies and its attendant expense in anticipation of the government release of the supply. Who would get the government supply and at what price? Such a challenge recalls the crude oil regulations of the 1970's.

Moreover, heating oil supplies must be "turned"--withdrawn and refilled--to prevent deterioration. Suppliers typically turn their supplies five times a season. The government would do so less often. So the result would be that the government would buy up to 2 million barrels of reserve capacity from existing suppliers who are presently turning that supply five times over each season. In effect the government would be taking out of the suppliers hands 10 million barrels of capacity, but the government would be supplying only 2 million barrels of capacity, in its place.

The resulting shortage and price increases would produce calls for tighter regulation and bigger government reserves. One can't help but recall the demands for the nationalization of the oil companies during the shortage of the 1970's.

Other anti-free market proposals such as using the Strategic Petroleum Reserve to control prices are always either too late to help or counterproductive. The Reserve should be used only for its intended purpose: to alleviate a serious supply disruption.

WHAT CAN CONGRESS DO?

There are sensible things that the Congress can and should do to maximize domestic energy supplies, such as:

1. Drilling in the Arctic National Wildlife Refuge, the Destin Dome off Florida Gulf Coast and other promising areas;
2. Extending the Deep Water Royalties Relief Act which has been a huge success in eliciting drilling in the deep water OCS;
3. Restructuring the electricity industry in order to bring competition to retail markets;
4. Streamlining citing requirements and addressing right-of-way problems for gas pipelines and electricity generation and transmission facilities; and
5. Removing artificial barriers which prevent nuclear energy from competing in the market.

Investigations of Oil Industry Pricing Since 1970

Date of Investigation	Investigating Body	Description of Probe
May 1973	FTC	"...investigation of competition in the industry is incomplete and no decision about any antitrust action has been made" - New York Times
August 1975	Pennsylvania	Grand jury investigation underway - Newsweek
1977 - 1983	DOJ	"The Justice Department yesterday ended a six-year investigation it said produced scant evidence that the major oil companies had conspired to run up the price of Persian Gulf oil in the late 1970s." – Washington Post
May 1979	DOJ	"President Carter orders investigation of gasoline shortages in California. Report cites loss of Iranian crude supplies following overthrow of the Shah and finds insufficient evidence of collusion." - Houston Chronicle, May 29, 1996
1984	DOJ	"investigates increases in home heating oil prices in the winter of 1983-84." - Houston Chronicle, May 29, 1996
1989	37 State Attorneys General	"Over half the states... have launched investigations of possible price-gouging... Thirty –seven state attorneys general wrote to the Justice department requesting an investigation of gas-price increases." – St. Petersburg Times
January 1990	DOJ	"...again looks into home heating oil and propane prices after prices spiked during an especially bitter cold snap in December 1990." - Houston Chronicle, May 29, 1996
August 1990	DOJ	"The antitrust division began the investigation on Aug. 6 in response to the nearly immediate increase in gasoline prices after the invasion [of Kuwait]." – New York Times "The investigation is called off two years later." - Houston Chronicle, May 29, 1996
September 1990	United Kingdom	"The five major UK oil companies, Shell, Esso, BP, Texaco and Mobil, were today cleared by the Office of Fair Trading of fixing petrol pump prices... There was no evidence of collusion..." - Press Association
1993 - 1995	North Carolina	"Apparently, the monopoly question needs further study" – Charleston Gazette (editorial)

1994-1998	Arizona	"Gas prices in Arizona are high, but don't blame hush-hush price-fixing meetings in corporate boardrooms, the Attorney General's Office concluded in a report released Monday after a four-year investigation." - Arizona Republic
May 1996 – May 1997	DOJ	"Bingaman has set up a five-member panel of attorneys and economists within the division 'to study recent increases of gasoline prices.' If this task force finds that market forces are not responsible... it will investigate to determine whether there is any evidence of collusion within the industry." – BNA Antitrust & Trade Regulation Daily "No enforcement action was taken," a DOJ spokeswoman said. –Houston Chronicle, May 20, 1997 "The [DOJ] completed its investigation of rapidly rising gasoline prices that occurred last spring by declaring it found no evidence that refiners and marketers engaged in price fixing or any illegal activity." 21st Century Fuels, June 1997
May 1996	Canada	"The [Competition] Bureau first investigated allegations of collusion and price-fixing in 1973. Several subsequent inquiries have all produced the same result: no evidence was found to prove that the big oil companies act in concert to dictate retail gasoline prices." - Maclean's, May 27, 1996 "Officials from the departments of industry and natural resources say privately that the inquiry... is unlikely to uncover a sinister conspiracy by the oil companies to fix pump prices that often fluctuate in unison according to gas supplies and the time of year." –Maclean's, June 3, 1996
October 1997	Connecticut	"The U.S. Conference of Northeast Governors (CONEG)... called on major oil companies to explain recent gasoline price increases, and Connecticut Gov. John Rowland (R) is expecting a report this month that might be referred to the State Attorney General for an investigation into possible price-fixing." Octane Week, October 13, 1997
May 1998	FTC	"After receiving warning of possible price collusion from California Sen. Barbara Boxer (D), the [FTC] began investigating retail gasoline pricing practices in San Francisco and San Diego."

May 1998	Iowa	"The Iowa Attorney General's office launched an investigation into price fixing in Dubuque and Waterloo. The Attorney General's office said from the beginning that proving price-fixing without insider would be difficult and did not find evidence of it." -Des Moines Register
June 19, 2000	FTC	"FTC acquiesces to Hyde's request for investigation of Chicago's high gas prices."

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Before the
Senate Agriculture, Nutrition and Forestry Committee

Washington, D.C.
July 20, 2000

Good morning Mr. Chairman and Members of the Committee. I want to thank you for the opportunity to present testimony regarding the recent rise in gasoline prices, particularly in the Midwest, and the role of ethanol. The causes for the unacceptably high gasoline prices in the Midwest are numerous, and ethanol can help both in the near term as the Midwest seeks access to reasonably priced gasoline and the long term as the United States develops a more responsible and proactive energy policy.

The Renewable Fuels Association is the national trade association for the domestic ethanol industry. Our membership includes ethanol producers, gasoline marketers, farm organizations and state agencies dedicated to the continued expansion and promotion of fuel ethanol. The ethanol industry produced approximately 1.5 billion gallons of ethanol last year from a variety of feedstocks, including corn, wheat, potatoes, beverage waste, wood waste, and other biomass. We are on a pace to break all previous production records in 2000 as production capacity continues to expand, particularly among farmer owned cooperatives, the fastest growing segment of our industry.

Mr. Chairman, before I begin my testimony, allow me to commend you for leading the charge to increase the use of fuels and chemicals produced from domestic, renewable biomass. With the recent enactment of your legislation, the National Sustainable Fuels and Chemicals Act, the entire nation stands to benefit. Not only does the production of bio-fuels and bio-chemicals help America's farmers and our rural communities, it increases energy independence and security, and improves our environment. Today, we are more reliant than ever before on OPEC and rogue nations to supply our insatiable and growing appetite for oil. Nowhere have the results of this unwise policy been more evident than in the Midwest. It is time for a change, and your legislation puts us on the right track.

Background:
Fuel costs across the Midwest rose dramatically over the past spring, particularly in May and June when several fuel supply disruptions created product shortages in many areas. In fact, wholesale prices of conventional gasoline, reformulated gasoline (RFG) and MTBE rose steadily beginning in June 1999. Chicago conventional gasoline rose 127%, from $0.54 to $1.23 per gallon; Chicago ethanol RFG rose 106%, from $0.60 to $1.24; and MTBE rose 130%, from $0.68 to $1.56. At the same time, ethanol prices have remained relatively constant.

Midwest Gasoline Price Crisis
Gasoline prices are a function of many factors: crude oil prices, manufacturing costs, supply distribution and market dynamics (i.e., bidding). In this case, the rising cost of crude oil is at the heart of the problem. Since January 1999, crude oil prices have risen more than $20, to over $32 per barrel. This, alone, has given rise to about a $0.50 increase in per gallon gasoline prices. But more importantly, it has created a significant disincentive for refiners to build gasoline inventories. European and U.S. gasoline stocks are at ten-year lows. In fact, gasoline stocks are so low that readily available gasoline in the U.S. today is the equivalent of slightly less than two days of current consumption.

While "just-in-time" inventory practices make sense for the shareholders of major international oil companies, it leaves consumers vulnerable to even minor disruptions in supply or production. For example, just last summer consumers in California were facing the highest gasoline prices in the nation because "just-in-time" inventory could not satisfy the increased demand that occurred when 7% of the state's gasoline production capacity was shut down by a refinery fire.

This past spring, refiners in the Midwest were unable to recover from three separate supply disruptions that occurred when critical pipelines supplying the region were temporarily shut down. Again, the "just-in-time" inventory practices of the refining industry left consumers vulnerable. When supplies are tight, market dynamics bid the price of gasoline higher than economic principle would dictate.

We believe this is supply mismanagement of the worst kind. Had refiners built inventory sufficient to accommodate typical disruptions, the tight supply situation that caused price bidding in the Midwest would not have occurred. Importantly, as the quarterly profit reports from the oil industry will demonstrate, the only winners in this situation are the companies that caused the problem to begin with by failing to assure adequate gasoline supplies.

What's worse, rather than simply admitting their mistake, the refining industry appears intent on assigning blame elsewhere. It's OPEC. It's EPA regulations. It's ethanol. Indeed, representatives of the major oil companies would have us believe they are innocent victims of circumstances beyond their control. Again, the soon-to-be-released quarterly corporate profit reports should shed some light on the real victims here – consumers.

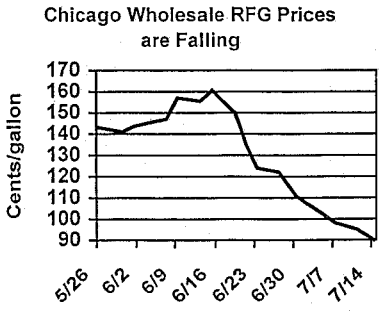
The Role of Ethanol RFG:
As noted, according to spokespersons for the American Petroleum Institute (API), the logistical burden and cost of ethanol RFG was primarily responsible for the price increases experienced in the Midwest. But such suggestions lack any factual basis and appear more motivated by politics than economics. Let's look at the facts.

First, refiners have known about the Phase 2 RFG requirements for more than six years and have never suggested they would lead to such significant price increases or supply shortages. Refinery modeling completed for the RFA by The Pace Consultants, Inc. of Houston, Texas, concludes the incremental cost associated with producing ethanol reformulated gasoline blendstock for oxygenate blending (RBOB) is approximately $0.007 per gallon.

Second, the cost of conventional gasoline without ethanol in the Midwest rose as steadily as reformulated gasoline. Indeed, while RFG wholesale prices rose 34% in May, conventional gasoline prices rose 30%. One area experiencing some of the highest gasoline prices today is Detroit, an area without RFG and little ethanol blending. If ethanol RFG were the cause, why were these conventional gasoline markets also seeing such inordinately high prices compared with the rest of the country?

Third, ethanol RFG is also being sold in St. Louis and Louisville at lower costs than MTBE blended RFG being sold in those areas and significantly less than the ethanol RFG being sold in Chicago and Milwaukee. St. Louis and Louisville are southern RFG cities. Chicago and Milwaukee are northern RFG cities. While the specific regulatory requirements are similar, they are not the same. The southern RFG must meet a more stringent VOC performance requirement, meaning that the ethanol RFG being sold in St. Louis is more difficult to make than the fuel being produced for Chicago. Thus, if the cost of producing ethanol RFG was the cause of the problem, why is ethanol RFG being sold in St. Louis and Louisville less costly for consumers?

The most compelling fact demonstrating that ethanol played no role in the Midwest gasoline price crisis is reflected in the following table. Since mid-June, without any changes to ethanol RFG formulations, without any changes to EPA's regulatory framework, without any changes in ethanol pricing, Midwest gasoline prices have come down precipitously! The only change that occurred was that additional gasoline supplies were made available. Ethanol was no more the cause of the price increases than it can be credited for the falling wholesale costs of both conventional and ethanol RFG in the Midwest.



According to OPIS data from July 19, the wholesale cost of conventional gasoline (w/o ethanol) is $.92/gallon, while the wholesale cost of ethanol reformulated gasoline in Chicago is also $.92/gallon.

Ethanol is not part of the problem. It is part of the solution.

Ethanol Can Help

As noted by the National Petrochemical & Refiners Association, "the U.S. is gravitating toward a situation in which demand for refined products is overtaking the capability of traditional supply sources.... With existing refining capacity essentially full, the U.S. will have to find additional sources to cover the incremental demand." Domestic energy sources such as ethanol can provide that incremental supply. NPRA has also noted the important contribution that oxygenates, such as ethanol, already provide:

> "Gasoline production increased by 903,000 b/d over the 1990-1997 period. Roughly 640,000 b/d, or 71%, of the incremental gasoline was made available via increased refinery utilization. *Oxygenates, driven primarily by the reformulated gasoline program, contributed 185,000 b/d, or another 20%.*"[1] [Emphasis added]

Ethanol can and should be a more consistent partner with domestic oil companies to provide the incremental additional supplies that are obviously needed. This is particularly true when there are unexpected disruptions in production or distribution. After the Explorer Pipeline fire in March, which supplies approximately 70% and 15% of St. Louis and Chicago gasoline respectively, the pipeline company and the U.S. Department of Transportation agreed to reduce operating pressure by 20%.[2] This resulted in a volumetric reduction of approximately 10%. This is volume that could be partially made up with increased ethanol blending. The domestic ethanol industry has alerted oil companies selling conventional gasoline in the Midwest that we are prepared to provide increased volume in this area today.

While U.S. refiners have just two days of demand in storage, the domestic ethanol industry has been building stocks in anticipation of increased demand as MTBE use is reduced in response to the growing MTBE water contamination crisis across the country. In fact, according to EIA, there is approximately 250 million gallons of ethanol currently in storage. That is the equivalent of almost a 45-day supply at current usage.

Moreover, the domestic ethanol industry is producing at a record pace. This year we will likely shatter all previous production records, with more than 1.6 billion gallons. We are prepared to meet the challenge for increased fuel supplies -- today. All we need are oil companies willing to supplement their tight supplies of petroleum and provide consumers with a high octane, low cost alternative fuel – ethanol.

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[1] "Refined Product Demand Outrunning U.S. Capacity," National Petrochemical & Refining Association, August, 1998.

[2] The actual reduction was more, however, because the pipeline was not being utilized to even the extent allowed by the Department of Transportation agreement.

U.S. Energy Policy

The current gasoline price crisis in the Midwest is only a symptom of a larger disease – an epidemic caused by a failed energy policy. Our foreign policy, our defense policy and our economic policy are still largely dictated by our nation's desperate need for oil. Until the U.S. gets serious about energy, and is prepared to do more than saber rattle and beg oil sheiks for increased supplies, our nation will be vulnerable to the kind of supply mismanagement that has stricken the Midwest.

While most of us can remember the lines at gasoline stations during the mid-70's, we have been lulled into a false sense of energy security by the lower gasoline prices of the past decade. Fundamentally, however, we are as hostage to the whims of OPEC today as we were during the height of the energy crisis that threw our economy into a tailspin 25 years ago. In fact, we are even more dependent now than we were then. In 1973, the United States imported just slightly more than 30% of domestic consumption. Today, we are importing almost twice that amount. As noted by the American Petroleum Institute recently on its web site, *"We import some 55 percent of our crude oil, meaning that we are at the mercy of foreign oil producing companies."*

August 2 marks the 10th anniversary of Saddam Hussein's invasion of Kuwait. In the ten years since, U.S. gasoline demand has risen, our refining capacity has declined, and our dependence on imported oil has grown. Indeed, the fastest growing source of oil for the United States is none other than Iraq, the very country we were at war with a decade ago. Senator Frank Murkowski was discussing this irony on the Senate earlier this week, noting:

> "The American people should wake up and be a little sensitive to the fact that we have lifted embargoes on technologies that allow him to increase his refining capacity... High oil prices yield Saddam Hussein $75 million a day under a legal U.N. oil-for-food program and $2 million a day in illegal smuggling revenue which is used to build up his war machine. As of today, it has cost thousands of lives, some $10 billion of U.S. taxpayers' money and 150,000 sorties, where we have flown to enforce our no-fly zone. Where is the logic? Where is the foreign policy? I can simplify foreign policy with regard to Saddam Hussein and Iraq in one single syllogism. We buy his oil. We send him our dollars. We put his oil in our planes, and fly over and bomb him. He puts out a press release saying how many people we injured or killed, they rally around Saddam Hussein, and the process starts all over again."

Senator Murkowski's observations are extremely timely, and demonstrate the critical need to develop an energy policy that is sensitive to our foreign policy objectives. We must develop and implement a domestic energy policy that promotes the expanded production and use of domestically produced, sustainable renewable fuels such as ethanol. Without it, we will continue to rely on rogue nations for our insatiable appetite for Middle East oil, and consumers will continue to remain vulnerable to price shocks and exaggerated energy costs.

Recommendations:
There is no segment of America more sensitive to energy costs and supplies than agriculture. Therefore, it is critical that this Committee take a leading role in developing policies that assure reliable and affordable energy supplies. The recent events in the Midwest have provided some valuable insights, and I would offer the following recommendations to assure this does not happen again.

1) **Supply Management:** Congress should take action to require refiners to move away from just-in-time inventory and toward a more consumer-friendly "just-in-case" inventory practices. There will always be unanticipated disruptions in fuel production and delivery. Consumers should not be forced to pay the price.

2) **More Fungible Supplies:** EPA should work to reduce the number of fuels needed to meet various state and federal clean air requirements. For example, EPA could eliminate the minor differences between northern and southern RFG, requiring a single national RFG specification. EPA should also discourage states from adopting boutique low-RVP fuel programs that add to the logistical burden for refiners while forfeiting the greater environmental benefit of RFG. Finally, EPA should promulgate a meaningful carbon monoxide offset for ethanol-blended gasolines, making it easier for refiners to blend ethanol in RFG programs.

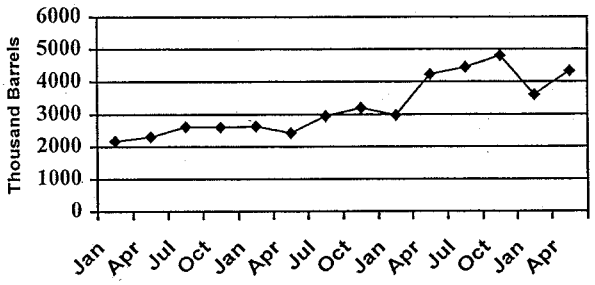
3) **Increased Use of Renewable Fuels:** With gasoline demand outpacing domestic refining capacity, Congress should be taking steps to dramatically increase the production and use of renewable fuels such as ethanol. Chairman Lugar has cosponsored S.2503, introduced by Senator Tom Daschle, which would require an increasing percentage of our motor fuel supplies be derived from renewable resources. The Renewable Fuels Association is currently working with the Senate Environment and Public Works Committee on a similar comprehensive legislative package to reduce the use of MTBE and increase the use of ethanol across the country. We look forward to working with you, Mr. Chairman, and the others on this Committee to see final passage of such an approach this year.

Conclusion:
The cause of the gasoline price crisis in the Midwest is quite simple: with $32 per barrel oil, refiners gambled with "just-in-time" supply management and lost. Consumers are now paying the price. With less than two days of available gasoline stocks, there is simply not enough supply to accommodate any disruptions in logistics or production. Refiners created a tight supply situation, and are now reaping the profits.

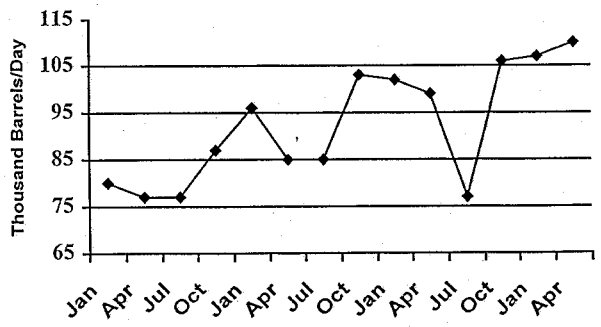
In the short term, ethanol remains an option to increase liquid fuel supplies and reduce consumer gasoline costs across the country. But Congress should take far more aggressive steps to formulate a national energy policy that will lead us to energy and economic independence. Renewable alternative fuels such as ethanol are part of the solution, both today and in the future.

Thank you.

Ethanol Stocks, 1997-2000



Ethanol Production, 1997-2000



Source: Energy Information Administration

Statement of Harry S. Baumes
Senior Vice President, Industry & Agriculture, WEFA Inc.
BEFORE THE
U.S. SENATE COMMITTEE ON
AGRICULTURE, NUTRITION, AND FORESTRY
July 20, 2000

Mr. Chairman and Members of the Committee, good morning, and thank you for the opportunity to share my comments with you at this hearing on energy issues and US agriculture. My name is Harry S. Baumes. I am currently employed as the Senior Vice President for Industry and Agriculture at WEFA, Inc. I have served in this capacity since February 1999. Previously, from January 1996 to January 1999, I served as WEFA's Senior Vice President of Agricultural Services. Founded in 1963, WEFA, Inc., is a consulting company that provides economic data, software forecasts, analysis, and consulting to assist clients evaluating current and future economic environments, developing business and marketing plans, and participating in strategic planning. WEFA employs nearly 250 economists worldwide. WEFA's Agricultural Services division provides economic analyses on aspects of production and commercial agriculture, including fertilizers.

Prior to joining WEFA, I was with the U.S. Department of Agriculture from 1988 to 1996, in various leadership capacities. From July 1981 to January 1988, I was Senior Service Director, Agriculture Services, initially with Chase Econometrics, and then the WEFA Group. The WEFA Group purchased Chase Econometrics in 1987. WEFA, Inc., is the current company that resulted from the 1987 acquisition and merger. Prior to that time, from October 1979 to July 1981, I was a visiting assistant professor at Virginia Polytechnic Institute and State University, in the Department of Agricultural Economics.

My educational credentials include: a Ph.D. in Agricultural Economics from Purdue University (December, 1978); a Masters in Agricultural Economics from Purdue (August, 1976); and a BS in Statistics and Biometry from Cornell

University (May, 1974). My graduate training emphasized supply, demand, and price analyses and quantitative methods.

In my comments at this hearing this morning I will focus on the following areas:

- Direct usage of "energy inputs" in production agriculture,
- Indirect usage of "energy" in production agriculture,
- Short run implications of higher energy costs, and
- Long run implications of higher energy costs on US agriculture.

Direct Usage of Energy Inputs in Production Agriculture

In the farm operation or production process, whether crops or animal production, farmers demand energy-based inputs. Different types of production activities require unique types and amounts of energy inputs.

Planting and harvesting activities typically require diesel fuel for tractors, combines, mowers, balers, and other equipment. This would include application of fertilizers and pesticides as well.

Electricity serves the farm sector well. Electricity is required to operate irrigation equipment. Dairy operations demand electricity to operate milking parlors, to keep milk cool, and to heat water for sanitation purposes. Electricity is needed to light homes, barns, and operate cooling systems for poultry. The farmer's living quarters needs to be "lighted," heated, and cooled, as well.

Natural gas, liquid propane, and electricity are used to power crop dryers.

In addition, gasoline, oils, and lubricants are necessary to the farm.

In the aggregate, farmers expended on direct energy expenses (fuels and oils, electricity) an average of $9 billion over the 1996-99 period, nearly 5.5% of cash expense and 5.0% of total production expenses. Estimates of energy expenditures and cash costs are expected to rise in 2000 after being fairly stable

over the past three years. Direct energy costs are estimated to rise by $2.5 billion to $11.8 billion. Total cash expenses are also estimated to rise, but at a slower rate than direct energy cost. As a result, direct energy costs' share of cash costs is likely to increase to almost 7.0%. The types and amounts of energy needed by production activity vary considerably.

Exhibits I, II, and III present US crop production cost information as reported by USDA's Economic Research Service. As a reminder, the cost information is for production and does not reflect storage, marketing, or any transportation costs involved in the actual selling of the commodity. For corn, direct energy costs have ranged from $24 to $25 per acre, about 15% of cash expenses. Soybean production is not as energy intensive as corn. Direct energy expenses amounted to $6 to $10 per acre and only about 7.0% of cash expenses. In absolute terms, wheat producers expend about $10 per acre on direct energy, similar to soybeans, but the share of cash expenses is about 14%, which is closer to corn. Energy is a major expenditure for farmers, and clearly, any factor that raises the cost of direct energy expenses to the farmer reduces returns per acre.

Indirect Usage of Energy Inputs in Production Agriculture

Indirect energy use by production agriculture reflects the amount of energy consumed in the production of manufactured inputs required by farmers, primarily fertilizers and pesticides. Farmers use millions of pounds of pesticides and millions of tons of fertilizers. Fertilizer production, particularly nitrogen, is energy intensive. Anhydrous ammonia is both a fertilizer and feedstock for production of other nitrogen products.

Exhibit IV presents the cost of production for anhydrous ammonia for the 1996-99 calendar years. Every ton of ammonia produced in the US requires between 33 to 34 mmbtu of natural gas. For the past four years, natural gas prices have

been stable. Energy costs in ammonia production accounted for about 75% of the total production costs.

Exhibit V presents energy costs, primarily electricity, share of total production expenses for phosphate materials. The production of fertilizer grade phosphate involves many steps. Energy costs in the production of triple superphosphate and diammonium phosphate account for 11% and 24% of total costs, respectively.

The recent rise in natural gas prices to more than $4.00/mmbtu has raised production costs to fertilizer producers and reduced margins. These cost increases have not been reflected in the prices farmers pay for nutrients. As a consequence, some nitrogen producers in the US have shut down facilities, either temporarily or permanently.

Energy-intensive fertilizer and crop chemicals cost account for about 43% of the total cash expenses for US corn production, 35% for wheat production, and 40% for soybeans. Direct energy costs account for another 10% to 15% of cash expenses for these crops. Energy is important to agriculture!

Short-Term Implications of Higher Energy Costs

In the short run, a farmer will have little to no opportunity to adjust to "shocks" or unexpected events. For example, once a farmer makes a decision to plant a specific crop, the farmer typically purchases or makes contractual obligations for the inputs required for production. Thus, the recent rise in diesel, gasoline, and natural gas prices has a direct effect on the farmers' bottom line. The farmer will not risk losing his crop if there is a pest infection or infestation—he or she will purchase the needed pesticide and treat the crop. Higher fuel prices will not prevent the farmer from harvesting the crop. This is illustrated in the costs of production information found in Exhibits I, II, and III.

Long-Term Implications of Higher Energy Costs

In the long run, more than one production cycle, farmers will respond to changes in input prices. In the absence of other changes, if the recent rise in energy costs is sustained, then farmers will adjust to less energy-intensive production activities and use less energy-intensive inputs in production. This has been demonstrated throughout history. The adoption of conservation tillage practices and the transition of gasoline to diesel engines.

Mr. Chairman, this concludes my comments this morning. I would be happy to answer any questions you and the Committee may have.

Exhibit I
CORN COST OF PRODUCTION AND RETURNS, UNITED STATES

ITEM	1996	1997	1998	1999
Gross Value of Production				
Corn	366.46	328.28	257.04	232.84
Loan Deficency Payment ($/Planted Acre)	0.00	0.00	23.80	36.76
Total, Gross Value of Production	366.46	328.28	280.84	269.61
Direct Government Payments				
Loan Deficiency Rate ($/Bu)	0.00	0.00	0.18	0.27
Transition Payment ($/Acre)	30.86	33.02	31.88	29.20
Payment Per Base Acre ($/Planted Acre)	30.86	33.02	31.88	29.20
Total Gross Revenue, Program Participants	397.32	361.30	312.72	298.81
Cash Expenses ($/Planted Acre)				
Fertilizer, Lime, and Gypsum	47.04	46.21	41.44	38.89
Chemicals	27.42	26.87	27.36	27.30
Custom Operations	11.30	11.30	11.29	11.25
Fuel, Lube, and Electricity	24.43	24.55	22.96	23.96
Other Variable Cash Expenses	50.76	53.23	55.39	55.80
Total, Variable Cash Expenses	160.95	162.16	158.44	157.21
Total, Fixed Cash Expenses	52.31	47.36	48.09	48.31
Total, Cash Expenses	213.26	209.52	206.54	205.51
Returns Over Total Cash Expenses (2)				
Program Non-Participant ($/Planted Acre)	153.20	118.76	74.30	64.09
Program Participant ($/Planted Acre)	184.06	151.78	106.18	93.29
Harvest-Period Price ($/Bu)	2.82	2.52	1.89	1.71
Yield (Bu/Planted Acre)	130.0	130.3	136.0	136.2

Source: Economic Research Service, USDA, and WEFA Inc.
(1) Includes general farm overhead, taxes and insurance, and interest.
(2) Excludes payments made in 1998 and 1999 under emergency aids packages.

Exhibit II
SOYBEAN COST OF PRODUCTION AND RETURNS, UNITED STATES

ITEM	1996	1997	1998	1999
Gross Value of Production ($/Planted Acre)				
Soybeans	256.36	281.22	223.17	182.14
Loan Deficency Payment ($/Planted Acre)	0.00	0.00	18.49	36.83
Total Gross Value of Production	256.36	281.22	241.66	218.97
Cash Expenses ($/Planted Acre)				
Fertilizer, Lime, and Gypsum	10.45	8.00	8.00	7.51
Chemicals	24.95	26.37	26.65	26.54
Custom Operations	3.65	5.85	5.84	5.80
Fuel, Lube, and Electricity	9.45	7.14	5.97	6.36
Other Variable Cash Expenses	31.50	35.71	36.82	36.91
Total, Variable Cash Expenses	80.00	83.07	83.28	83.12
Total, Fixed Cash Expenses	46.80	45.38	45.99	46.23
Total, Cash Expenses	126.80	128.45	129.27	129.36
Returns Over Total Cash Expenses ($/Planted Acre) (:	129.56	152.77	112.39	89.61
Harvest-Period Price ($/Bu)	6.91	6.54	5.19	4.50
Loan Deficiency Rate ($/Bu)	0.00	0.00	0.43	0.91
Yield (Bu/Planted Acre)	37.1	43.0	43.0	40.5

Source: Economic Research Service, USDA, and WEFA Inc.
(1) Includes general farm overhead, taxes and insurance, and interest.
(2) Excludes payments made in 1998 and 1999 under emergency aids packages.

Exhibit III
WHEAT COST OF PRODUCTION AND RETURNS, UNITED STATES

ITEM	1996	1997	1998	1999
Gross Value of Production ($/Planted Acre)				
Wheat	146.94	125.29	104.73	90.93
Wheat Straw	5.35	5.53	5.24	4.55
Loan Deficency Payment ($/Planted Acre)	0.00	0.00	11.62	17.66
Total, Gross Value of Production	152.29	130.82	121.59	113.14
Direct Government Payments				
Loan Deficiency Rate ($/Bu)	0.00	0.00	0.29	0.47
Transition Payment ($/Acre)	18.46	19.56	18.88	17.30
Payment Per Base Acre ($/Planted Acre)	18.46	19.56	18.88	17.30
Total Gross Revenue, Program Participants	170.75	150.38	140.48	130.43
Cash Expenses ($/Planted Acre)				
Fertilizer, Lime, and Gypsum	21.11	19.85	18.21	17.09
Chemicals	6.23	6.32	6.13	6.12
Custom Operations	5.35	6.33	6.85	6.83
Fuel, Lube, and Electricity	9.71	10.20	9.07	9.47
Other Variable Cash Expenses	27.61	27.79	27.33	27.66
Total, Variable Cash Expenses	70.01	70.49	67.59	67.16
Total, Fixed Cash Expenses	25.45	27.16	23.74	23.79
Total, Cash Expenses	95.46	97.65	91.33	90.95
Returns Over Total Cash Expenses				
Program Non-Participant ($/Planted Acre)	56.83	33.17	30.26	22.18
Program Participant ($/Planted Acre) (2)	75.29	52.73	49.15	39.48
Harvest-Period Price ($/Bu)	4.84	3.49	2.64	2.42
Yield (Bu/Planted Acre)	30.4	35.9	39.7	37.6

Source: Economic Research Service, USDA, and WEFA Inc.
(1) Includes general farm overhead, taxes and insurance, and interest.
(2) Excludes payments made in 1998 and 1999 under emergency aids packages.

Exhibit IV
Anhydrous Ammonia Production Costs

	1996	1997	1998	1999
Anhydrous Ammonia				
Energy Inputs Required Per Ton Produced				
Natural Gas (mmbtu)	33.714	33.755	33.602	33.471
Electricity (kwh)	188	123	128	114
Cost of Energy Inputs Per Unit				
Natural Gas ($)	2.08	2.22	2.10	2.19
Electricity ($)	0.035	0.034	0.031	0.033
Cost Per Ton				
Natural Gas	70.13	74.94	70.56	73.30
Electricity	6.58	4.18	3.97	3.76
Other (1)	28.81	26.51	24.65	24.38
Total Production Cost Per Ton (1)	105.52	105.63	99.18	101.44

Source: Production Cost Survey For The Year Ended December 31, 1999, The Fertilizer Institute
(1) Excludes depreciation

Exhibit V
Energy Costs Share of Total Production Costs for Phosphatic Materials, 1999 (1)

Phosphatic Material	
Phosphate Rock	15%
Sulfuric Acid	5%
Phosphoric Acid	11%
Triple Superphosphate	11%
Diammonium Phosphate	24%

Source: Production Cost Survey For The Year Ended December 31, 1999, The Fertilizer Institute
(1) Excludes depreciation

STATEMENT OF KEITH COLLINS
CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE
U.S. SENATE COMMITTEE ON
AGRICULTURE, NUTRITION, AND FORESTRY
July 20, 2000

Mr. Chairman and Members of the Committee, thank you for the invitation to participate in today's hearing on energy issues and U.S. agriculture. In my statement, I will profile the role of energy in U.S. agriculture and discuss the effects of this year's increases in energy prices on agriculture as both a user and a producer of energy.

Energy use in U.S. agriculture

The primary forms of energy used on U.S. farms and ranches include diesel fuel, gasoline, natural gas, liquid petroleum (LP) gas and electricity. Farmers also use significant amounts of energy indirectly through energy intensive farm inputs, such as commercial fertilizers and pesticides. Both direct and indirect energy consumption for farm production required 1.7 quadrillion British thermal units (BTUs) in 1998, the most recent year of complete data, or about 2 percent of total energy consumed in the United States (figure 1).

Increased energy efficiency. U.S. agriculture has changed the forms of energy used and become much more energy efficient over time. Energy use grew during the 1960s and 1970s, peaking at 2.2 quadrillion BTUs in 1978. High energy prices, stemming from the oil crisis that started in the early 1970s and lasting through 1982, led farmers to become more energy-efficient. Many farmers switched from gasoline-powered to more fuel-efficient diesel-powered engines, adopted conservation tillage practices, shifted to larger multifunction machines, and adopted energy-saving methods of crop drying and irrigation. These energy-saving measures helped

farmers reduce direct energy use on the farm by 41 percent from 1978 to 1998, while productivity grew sharply (figure 2).

One of the most notable changes in farm energy consumption over the past 30 years has been the substitution of diesel fuel for gasoline (figure 3). Gasoline use has dropped from 42 percent of total direct and indirect energy used on farms in 1965 to only 8 percent in 1998, while diesel's share of total energy has risen from 13 percent to 26 percent. Producers switched to diesel fuel equipment as farms grew in size. As farmers scaled up their operations they began to purchase large scale equipment with more horsepower. Heavy-duty vehicles generally are powered by diesel engines because they are more energy efficient than gasoline engines. Thus, diesel powered equipment has become the standard on U.S. farms.

The adoption of energy-conservation tillage practices also has contributed to decreasing fuel use on U.S. farms. Conservation tillage leaves 30 percent or more of the plant residue on the soil surface after planting. It requires far less energy than conventional-till that involves extensive field preparation prior to planting. Adoption of conservation-till on major field crops, such as corn and soybeans, began to increase significantly in the 1980s.

Commercial fertilizers (nitrogen, phosphate, and potash) are the most energy intensive farm input, accounting for about 47 percent of total energy required in farm production in 1998. Fertilizer consumption grew throughout the 1960s and 1970s, peaking at 23.7 million nutrient tons in 1981. Since the mid-1980s, fertilizer use has remained relatively stable, ranging from about 19 million tons to 22 million tons from 1984 to 1998. Use declined from its peak level in 1981 because of fewer planted acres and stabilizing rates of application.

Manufactured pesticides (including herbicides, insecticides, and fungicides) also require large amounts of energy. Pesticides used on major crops increased rapidly in the 1960s and 1970s, rising from 215 million pounds in 1964 to 572 million pounds in 1982. Pesticide use declined between 1982 and 1990, as commodity prices fell and large amounts of land were taken out of production by Federal programs. Since 1990, pesticide use has been growing, but at much slower rate than the 1960-80 period. Pesticide use grew from 498 million pounds in 1990 to 566 million pounds in 1995.

Energy use by commodity. Direct energy expenditures as a share of total farm cash production expenditures may be used as a measure of energy intensity for various commodities. Energy expenditures for liquid fuels (diesel, gasoline, and LP gas) and electricity on U.S. farms can vary significantly by commodity type. Poultry, which requires large amounts of LP gas and electricity for controlling the temperature of indoor facilities has the highest energy expenditure ratio. Crops that require moisture removal, such as tobacco, cotton, peanuts and grains, also have relatively high energy expense ratios (figure 4). Crop dryers use various forms of energy, including natural gas, LP gas, and electricity. Irrigating crops like rice, tobacco, cotton, and peanuts can also increase energy expenses.

The prices that farmers pay for fuels, including gasoline, diesel, LP gas, and natural gas, are more volatile than other farm input prices, such as fertilizer, machinery or general supplies. Over the past 8 years, the fuels price index reached its lowest point in March 1999 at about 65 percent of the 1990-92 average price (figure 5). Since that time it has doubled, reaching a high in March 2000 of about 130 percent of the 1990-92 average. Fuel prices have remained high since March, with the latest estimate for June at 126 percent of the 1990-92 level. Gasoline

prices paid by farmers have increased the most since last summer, followed by diesel prices, while LP prices fell. USDA does not collect natural gas prices paid by farmers; however, data collected by the Energy Information Administration on residential consumers indicate that natural gas prices have increased this year. The March 2000 price for natural gas was $6.82 per thousand cubic feet, up from $6.00 the previous March. Fertilizer prices have increased steadily over the past decade, but do not seem to have been affected yet by the recent petroleum price spikes. Pesticide prices have remained steady and are not expected to rise in the near future.

Effects of higher energy prices on energy-using agriculture

Farm expenses and income. Because farm production relies on energy, energy prices can have a significant effect on farm expenditures and incomes. During the energy price increases of the 1970s, energy's share of total farm production expenses rose from 11 percent in 1972 to 16 percent by 1981 (figure 6). Direct energy costs went from about 3 percent of total farm production expenditures to 6 percent. As fuel supplies stabilized, direct energy costs returned to a 3 percent share of production expenses by the end of the 1980s and remained in that range until recently. Costs associated with indirect energy also increased significantly in the 1970s. The amount of money spent on indirect energy went from 8 percent of total farm production expenditures in 1972 to 11 percent in 1975. The share of indirect energy expenditures returned to 8 percent in 1983 and then steadily rose to almost 11 percent in 1998.

This year's spike in fuel prices is helping to push total farm production expenses to an expected $199 billion in 2000, 3 percent over 1999, the first significant rise since 1997. Farm direct fuel expenditures are forecast to rise to $8 billion in 2000, up $2.2 billion or 39.5 percent

from 1999, which is about 4 percent of total farm production expenditures, the highest percent since 1986.

However, the recent oil price increases thus far are not having the same type of effect on indirect energy costs as in the 1970s, and these indirect costs are expected to decline $0.4 billion in 2000. The share of indirect energy expenses as a percent of total farm production expenses declined 1 percentage point in 1999 and is expected to decline by 0.4 percent in 2000. The impact of higher fuel prices will also be felt in higher expenses for machine hire and custom work and perhaps further down the road in higher farm chemical expenses.

Although farm expenditures for fuels are expected to increase by $2.2 billion in 2000, net cash farm income is projected to increase by $1.5 billion from 1999. The increase in farm income reflects supplemental income assistance provided in legislation enacted in 1999 and 2000 that will help offset higher inputs costs for many producers this year.

Average spot price of natural gas (Henry Hub) for January 1 to June 30, 2000 was 48 percent higher than for the same period in 1999. The price of natural gas in June of 2000 was $1.89 per million BTUs higher than in January 2000 and more than $2.00 higher than in June 1999. Higher demand for natural gas for power generation, seasonality of U.S. natural gas storage, and higher oil prices have pushed up natural gas prices at wholesale and retail levels. For example, natural gas generation increased from 275 billion kilowatt hours in 1996 to 325 billion kilowatt hours in 1998. Natural gas generation is projected to increase to 517 billion kilowatt hours by 2005. If steady demand increases maintain higher natural gas prices, costs of manufactured input could rise for farmers in the future, because natural gas is the primary energy input for manufacturing nitrogen fertilizer and pesticides. However, since natural gas is only

one component of the final price of these products, a 10 percent increase in the costs of natural gas will generally result in a less than 10 percent increase in the cost of these inputs.

Mitigation potential. Farmers are limited in what they can do to mitigate the effects of higher energy prices, although some options are available. Where possible, some producers may be able to employ different production strategies, such as reducing field operations by switching from conventional tillage practices to no till or minimum till; adjusting fertilizer application rates; or using animal manure and green fertilizer. Some producers may also have been able to switch to crops which require less fertilizer, such as soybeans instead of corn, although this year's acreage data, which showed more corn acres than expected, suggest such switching was not prevalent. And in spite of higher oil prices, acreage planted to the major crops is up, from 330 million acres in 1999 to 331 million in 2000.

Since many farmers own fuel storage tanks they can purchase fuel when prices are low and store it for later use. This allows them to avoid seasonal price spikes, for example, that occur in the summer when gasoline demand traditionally goes up and in the early winter when heating oil demand increases diesel prices. Some producers may even be able to reduce price by hedging in the futures markets.

Over the long term, farmers could replace old and energy inefficient farm machinery with more energy efficient equipment. In addition, more advanced farming practices could be adopted, such as precision farming that optimizes the use of chemicals and fertilizers. New seed varieties are also reducing chemical requirements.

Post farm-gate impacts. The effects of higher energy prices on off-the-farm activities are also affecting producers. Higher diesel fuel prices are increasing the costs of transporting

agricultural commodities from farm to consumer. Increases in transportation costs increase the basis–the difference between prices at the farm and at terminal markets–and they can reduce the price first buyers bid for farm commodities as their processing and distribution costs increase. As a result, farmer could receive lower prices for their products.

More energy is used to transport, process, and market agricultural commodities than energy used on the farm to produce these commodities. Modes of transportation of farm commodities from farms to storage facilities, processing center, and marketing and distribution for domestic and export markets are truck, rail and barge. Barge and rail are used for long haul, while trucks are used for finished products and for short haul. Railroads and inland waterways are the most cost effective transportation modes to move bulky products long distance. Although railroads transported approximately 40 percent of all U.S. grains to final market destinations in 1997, railroads hauled more than 70 percent of all grains from the Upper Great Plains.

Increasing fuel costs will not affect railroads as much as airline and truck transportation, but will affect railroads more than barge transportation. Trains are three times as fuel efficient as trucks, moving 384 revenue ton-miles of freight per gallon of fuel consumed in 1998. Although, Class I railroads used more than 3.6 billion gallons of diesel fuel in 1998 at a cost of a little more than $2 billion, diesel fuel expenses were only 6.2 percent of total operating revenue and only 7.4 percent of total operating expenses.

The effect of increasing fuel costs upon railroad tariffs is hard to estimate generally. Railroad tariffs are bound on the bottom by their marginal costs and at the top by the rates of competing rail, truck and barge carriers. Due to the use of differential pricing by railroads, it is likely that those shippers most reliant upon railroad transportation will face the highest rail tariff

increases. Thus, rail tariffs for shippers in the Plains States may increase more than those for shippers located closer to barge transportation. For those shippers having access to water transportation, rail rates probably will increase little more than the price increases for barge transportation. However, for those shippers whose only other alternative is truck transportation, railroads have the ability to increase rail tariffs dollar-for-dollar with truck tariff increases. When differences in the quality of transportation service are not considered, higher fuel prices will tend to favor railroad over truck transportation.

The cost of marketing U.S. foods has increased considerably over the years, mainly because of rising costs of labor, transportation, food packaging materials, and other inputs used in marketing, and also because of the increase in convenience and service provided with the food. Marketing costs accounted for 80 percent of the $585 billion consumers spent for domestic farm food, not including imported foods, in 1998. The remaining 20 percent, or $119 billion, represents what is paid for the raw farm commodities. Components of the post-farm marketing costs are labor, packaging, transportation, energy, advertising depreciation, rent, interest, and profits. Higher energy prices will increase energy costs as well as the transportation cost of food marketing. In 1998, energy accounted for 3.5 percent and transportation 4 percent of total marketing costs of food. Labor accounted for 39 percent and farm value of food accounted for 20 percent in 1998.

Higher energy costs will increase the costs of processing, cold storage and marketing and distribution of food products. In the long run, the higher price of energy on food production will likely be transferred largely to consumers. In 2000, the all-food CPI is forecast to increase 2 percent. The higher oil prices thus far do not appear to have affected retail food prices.

Although energy costs could be a source of upward pressure on the food CPI later in the year, this year's large supplies of crops and meats are likely to keep the retail food CPI stable.

Effects of higher energy prices on energy-producing agriculture

Higher energy prices and the dependence on imported oil highlights the great potential of U.S. agriculture to produce large amounts of energy. Crops, crop residues, and forest residues, as well as energy crops planted on idle or marginal crop land, could be converted to various form of energy, such as ethanol, biodiesel, and biopower. Ethanol from grains now account for almost all of U.S. biofuel production. In 1999, about 1.5 billion gallons of ethanol were produced by 58 ethanol plants located in 19 States. This year production is projected to increase to 1.6 billion gallons. Total US production capacity is 1.87 billion gallons with another 175 million gallons under construction and over 600 million gallons are under planning.

Efforts are under way to convert cellulosic materials, such as grass and wood, to ethanol. Four companies are planning to build cellulosic ethanol plants in the United States in the near future. According to Department of Energy projections, cellulosic ethanol production by 2010 may increase to about 300 million gallons. Currently, corn stover is a feedstock of choice due to its large concentrated supply and relatively low cost compared to other feedstocks.

Because ethanol only accounts for 1.2 percent of the U.S. gasoline supply, its price does not affect the overall price of gasoline. Instead, the price of ethanol is affected by the price of gasoline, other oxygenates, and octane. Consequently, as energy prices have increased this year and corn prices rose over fears of a dry summer, the price of ethanol increased from $1.18 per gallon in January 2000 to $1.35 by June 2000 (figure 7). However, the price of ethanol is still cheaper than MTBE and all grades of gasoline. The net corn cost, which is the price of corn,

minus the price of coproducts, divided by the number of gallons of ethanol produced per bushel of corn, for the average wet mill was $0.33 per gallon in 1999. The net corn cost increased from $0.34 per gallon in January 2000 to $0.54 in May 2000, in response to higher prices of corn. With corn prices now declining and a large harvest in prospect, assuming average weather from here on, net corn costs for ethanol plants are expected to decline, providing an incentive to expand production.

Government policies encouraging bioproduct and bioenergy development

Agriculture can play a major role as a supplier of bioenergy. The major objective of Executive Order 13134 and the recently enacted legislation sponsored by Chairman Lugar, the Biomass Research and Development Act of 2000, is to boost production of bioproducts and bioenergy threefold by 2010. Both USDA and the Department of Energy are working closely together to implement the EO and the new act and expand use and production of bioproducts and bioenergy, utilizing agricultural resources.

To help achieve these goals, USDA proposed using Commodity Credit Corporation funds to boost production of ethanol and biodiesel during the next three fiscal years. A proposed rule is now nearing completion. USDA is also proceeding with implementing Section 769 of the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Act of 1999 to provide new authority to use Conservation Reserve Program (CRP) land for pilot biomass projects. Specifically, Section 769 of USDA's FY 2000 appropriations act provides that the Secretary shall approve not more than six projects, no more than one of which may be in any State, under which land subject to CRP contracts may be harvested for recovery for biomass used in energy production if: (1) no acreage subject to the contract is harvested more than once

every year and (2) not more than 25 percent of the total acreage enrolled in any crop reporting district is harvested in any year. In addition, no portion of the crop on the pilot land may be used for any commercial propose and participants participating in the project must agree to a 25 percent reduction of the annual rental payment they would normally receive in the CRP for each year in which the acreage is harvested. We expect these two programs to be important steps in the continuing effort to realize the potential of U.S. agriculture to help meet the U.S. demand for clean, affordable energy.

That completes my statement Mr. Chairman and I would be pleased to respond to questions.

Figure 1
Estimated farm energy use, 1998

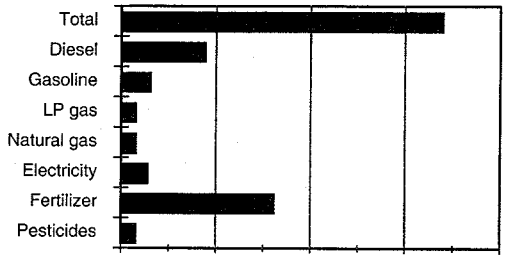
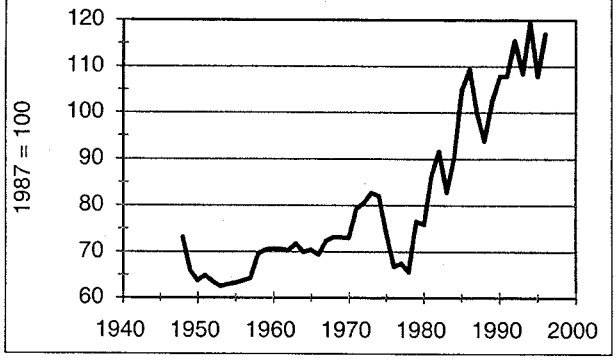


Figure 2
Farm output per unit of energy



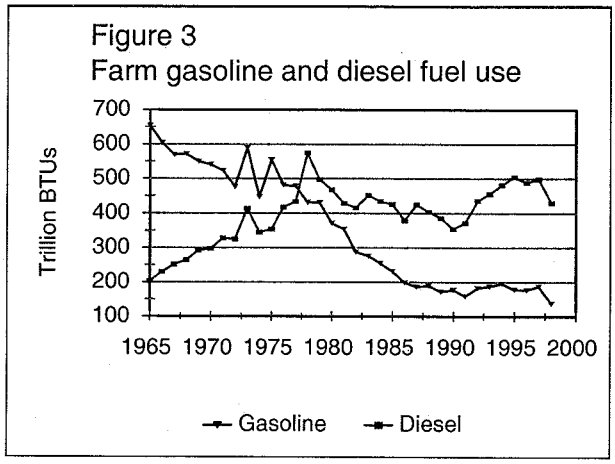


Figure 3
Farm gasoline and diesel fuel use
Trillion BTUs
700
600
500
400
300
200
100
1965 1970 1975 1980 1985 1990 1995 2000
Gasoline
Diesel

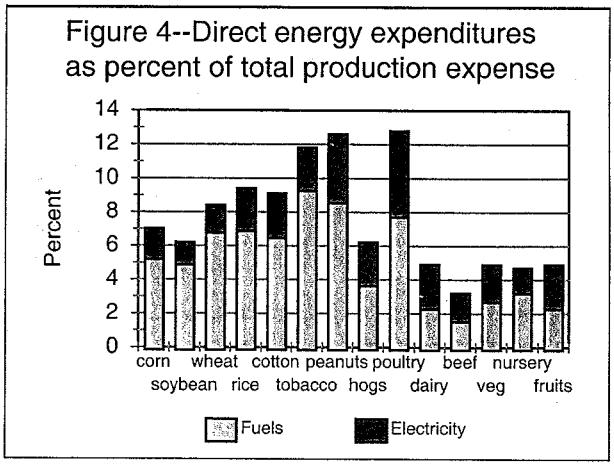


Figure 4--Direct energy expenditures
as percent of total production expense
Percent
14
12
10
8
6
4
2
0
corn
wheat
cotton
peanuts
poultry
beef
nursery
soybean
rice
tobacco
hogs
dairy
veg
fruits
Fuels
Electricity

Figure 5
Prices Paid by Farmers (1990-92=100)

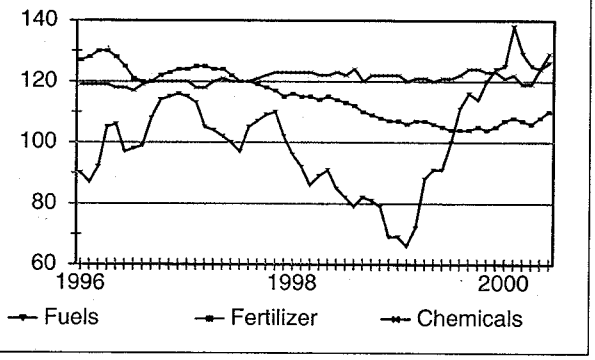
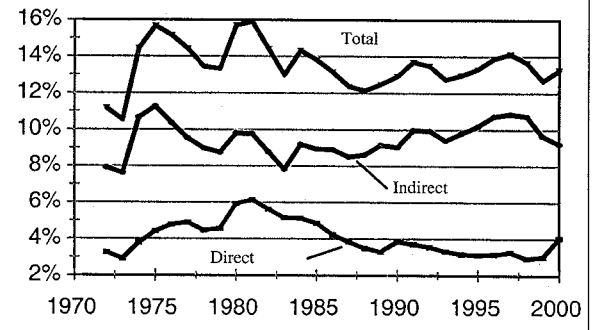
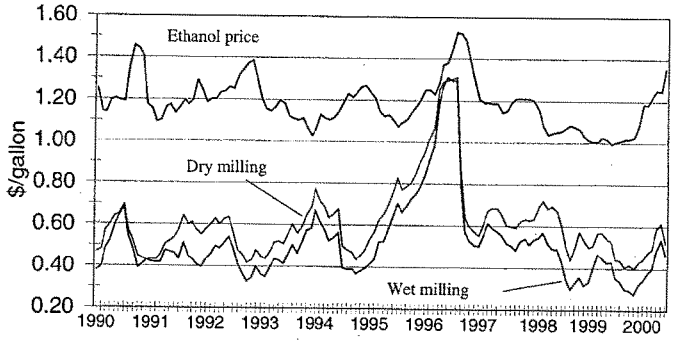


Figure 6--Energy expenses as percent of total farm production expenses



15

Figure 7
Net corn cost



Written Statement of James McCarthy
General Manager, CITGO Petroleum Corporation
Before the Senate Agriculture Committee
July 20, 2000

Good morning.

I am Jim McCarthy, General Manager, Government and Public Affairs at CITGO Petroleum Corporation. CITGO is a U. S. corporation headquartered in Tulsa, Oklahoma. Our roots extend back to the early 1900's as Cities Service Company. While our products are marketed throughout most of the U.S., we primarily serve those regions east of the Rockies. We own and/or operate a network of modern refineries in Houston, Corpus Christi, Texas, Lake Charles, Louisiana, and Lemont, Illinois. In addition, we own asphalt refineries in Paulsboro, New Jersey and Savannah, Georgia. To get our products to where the American public needs them, we own one of the nation's most extensive systems of petroleum storage terminals. According to the latest data available, CITGO is the second largest marketer of gasoline in the United States with 10.3 % share of the market.[1]

I am pleased and honored to have the opportunity to speak before the Senate Agriculture Committee about gasoline supply and price, as well as the overall issue of providing the energy that is so critical to the American farmer and to this nation's economic well-being. CITGO and the rest of the refining, marketing and transportation industry share your concern regarding the recent spike in energy prices. CITGO empathizes with those families whose household budgets felt the impact of the rapidly rising gasoline prices in the Chicago and Milwaukee markets. It is our sincerest hope that a sound, cohesive national energy policy emerges from hearings such as this. What America needs is an energy policy that ensures the quality of life that the American people expect and deserve.

I'd like first to discuss the key factors contributing to the current situation. I will conclude by discussing a positive and constructive path forward based on solid economics—one that ensures the clean, affordable fuels that are necessary to this nation's well-being.

The oil and gas industry has done an excellent job of providing cleaner fuels at an affordable price. As a result, Americans have access to inexpensive transportation fuels; a fact that has contributed to our overall high standard of living. In fact, using constant 1999 dollars, the average retail price of gasoline, including taxes, decreased from $2.27 a gallon in 1918 to $1.16 a gallon in 1999, according to research by Cambridge Energy Research Associates, (CERA) one of the world's leading energy research firms.[2]

Unfortunately, American's ability to have dependable supplies of transportation fuels when and how they want it is in jeopardy as a result of our energy and regulatory policy. The situation we saw earlier this summer is a classic study of the relationship of supply, demand and price. In a free market system, the price of a commodity like gasoline is not so much a factor of the cost of manufacturing and delivering the finished product, but rather the relationship between consumers' demand for a product and manufacturers' ability to supply it to the marketplace. In the current situation, the price of gasoline in the Midwest was driven up by the inability to manufacture and deliver the products to the marketplace to meet consumers' demand. Once again, the consumer has been forced to pay for the hidden impact of actions taken over the course of several decades—primarily by the EPA.

For background, I want to briefly discuss the key factors that have contributed to the recent situation. Both the recently disclosed June 5, internal DOE memorandum and the June 16, 2000, Congressional Research Service memorandum[3], attributed the price swings to the following five factors:

- **Higher crude oil prices.** Refiners' crude acquisition costs have risen by the equivalent of 30 cents per gallon as compared to one year ago and 48 cents per gallon as compared to year and a half ago.

- **Special Fuel Formulations.** Reformulated gasoline or RFG is required in numerous areas designated by EPA as ozone non-attainment areas. About 30 percent of the gasoline sold in the United States is RFG, including the Chicago and Milwaukee markets. In the Midwest, however, refiners use ethanol instead of MTBE (the additive used in most other RFG areas to meet the oxygen requirements of the RFG programs). This means that RFG from the rest of the country cannot be shipped to the Midwest if additional supplies are needed. Refiners must ship a special blend stock used to make RFG in the Midwest, called RBOB, which is very difficult to manufacture. Let me tell you what happened at CITGO's Lemont, Illinois, refinery—one of the six refineries in the area. During the first two months of this year, our refinery produced more RFG than in 1999. But as we began making the new Phase II RBOB, which was mandated by EPA regulations, we quickly fell behind last year's production because it was more difficult to blend than we had anticipated. It has taken until June for us to learn how to efficiently blend this product and catch up with last year's RBOB production levels. So ethanol is not the cause of the magnitude of the recent price spike, but rather the fact that ethanol requires the use of Phase II RBOB which, is not fungible with other Reformulated Gasolines.

- **Low inventories.** According to the Department of Energy's. Energy Information Agency (EIA), crude oil and gasoline inventories started the summer driving season at extremely low levels. These lower inventories are the result of converting to EPA's Phase II RFG "summer" specifications. To convert to the tighter specifications of the new summer

grade RFG II, refiners, as well as terminals, virtually empty their storage tanks to minimize the time required to convert the tanks to be ready for the summer driving season. In their website, EIA states that there is the equivalent of only two days' of consumption in available inventory. When supplies are this low, any disruption results in price increases.

- **Operational problems**. Two pipelines serving the upper Midwest have experienced operational problems, at the time when refinery and terminal inventories were low This prevented these low inventories from being replenished. As stated in DOE's just issued *"Primer on Gasoline Pricing,"* disruptions such as these in a tight regional market have the potential to lead to significant price increase—as evidenced in the upper Midwest in recent weeks. This was further exacerbated when the Mobil Joliet refinery was slow coming up after a turnaround, and the Clark Blue Island Refinery experienced a power outage that has left it essentially inoperable. Both these refinery outages reduced the availability of gasoline in the Midwest. Finally, just this month, the ship channel through which we receive crude oil and ship out finished products at our Lake Charles refinery was blocked because of a freak accident disrupting our ability to ship products to all markets.

- **Patented RFG Process.** A recent federal court ruling that Unocal has a valid patent on a blend formulation related to the new summer RFG has caused RFG production to be scaled back at several refineries. For instance, CITGO's Lake Charles refinery has the ability to produce about 15,000 barrels per day of summer grade RFG, but to avoid the patent issue, we have cut production to about 4,000 barrels per day.

The Congressional Research Service memorandum concludes that about "25 cents of the regional price increase is due to transportation difficulties and another 25 cents, roughly estimated, could be due to the unique RFG situation in Chicago/Milwaukee."

The inescapable fact is that the U.S. pipeline and distribution system was designed to handle a half dozen grades of gasoline. Today, it has to cope with more than 3 dozen grades of "boutique" gasoline. Keep in mind that no refinery can manufacture all of these fuels, so they have to be shipped all over the country to where they are needed. Each of these fuels has to be kept separate from the time they are manufactured—separate pipeline shipments, separate tankage, separate compartments on barges and trucks. Daniel Yergen has rightly called this the "Balkanization of America." Refiners can no longer substitute fuels from areas of abundant supply into areas of insufficient supply because they are literally different fuels. What we have is a hodgepodge of fuels mandated by different state regulators, which has unintentionally constrained manufacturers' ability to refine and supply gasoline to the marketplace. [See attachment #1]

Let's look specifically at the Midwest. PADD II, which includes the Chicago and Milwaukee markets, is a net consumer of gasoline. In 1998, for instance, PADD II consumed almost 475,000 barrels per day more gasoline than the refineries in that area could manufacture. According to the just-released National Petroleum Council's report, in order to have supply meet the demand in PADD II, 350,000 barrels per day had to be shipped in from the Gulf Coast, primarily by pipeline, and another 160,000 barrels per day had to be shipped in from the East Coast. It is clear to see that a supply problem in the Midwest, the Gulf Coast or the East Coast has a definite impact as product is pulled from one region to fill shortages in another.

In my hometown of Tulsa, we are experiencing a situation that graphically illustrates this point. Like many other regions, Tulsa has experienced in recent weeks sharp increases in gasoline prices. Here's why: our local regulators have entered into an agreement with EPA so that a special gasoline with 8.2 Reid Vapor Pressure (RVP) is sold in Tulsa county during summer months. Tulsa is the only area in the nation where this particular gasoline is sold. As a result, no refiner manufactures it, but rather two different gasolines are mixed together to meet the 8.2 specification. Most of these two kinds of gasoline come from refineries on the Gulf Coast and are transported by pipeline to Tulsa. That was not a problem in 1999. Unfortunately, since last year, 98 counties in East Texas that are along the pipeline that connects Tulsa to the Gulf Coast refineries now require one of the gasolines that is blended to make Tulsa's fuel. That increased demand from motorists in the Texas counties caused an increase in the price of gasoline in our Tulsa market when the summer driving season began. Once again, this is a simple case of the relationship of supply, demand and price.

This is a recurring theme around our country. As local regulators create new and different gasolines, refiners no longer have the flexibility to quickly shift supply to the areas of greatest need. The result is that situations that previously could have been corrected very quickly, take much longer for the system to correct. This longer correction time creates shortages, which in turn creates price spikes. The delicate balance of the supply and demand system can be upset by the slightest disruption.

This price and supply situation is not the first such occurrence in this nation, nor, unfortunately, will it be the last unless industry warnings are heeded. Similar situations arose in 1989 with the advent of EPA's regional RVP regulations, again in 1995 when Phase I RFG was introduced and again in 1999. According to industry expert Trilby Lundberg[4], despite persistent industry warnings, "We are in a nightmare of patchwork environmental regulations

which will wreak havoc with gasoline supply and price stability. The wide variety of regulations affecting formulas has created wide price disparities around the country and made the distribution of gasoline more problematic."

The important point to recognize is that the root cause of the current price and supply situation stems from the unfortunate fact that this nation's only energy policy is driven by the Environmental Protection Agency. In reality, it's not a policy at all but a jumble of regulations and requirements that has been added to every year since the Clean Air Act was passed in 1970.

Unfortunately, this jumble of regulations fails to take into consideration the American people's needs or the refiners' ability to produce and distribute this increasingly complex range of products. It's a refiner's nightmare—one that is now beginning to affect the American people.

And it appears there is no end in sight. We are already faced with the next wave — EPA's requirements for ultra-low sulfur gasoline and diesel specifications. I am very concerned that the EPA is, again, not listening to the warnings of the oil industry as to the potential for inadequate supplies of products resulting from their recent Tier 2 gasoline regulations and their proposed diesel sulfur regulations. Unless the EPA changes it's approach I expect to see many future disruptions in supply with resultant price increases. The end result of these and the host of other EPA regulations staring us in the face ensure that more refiners, unable to afford the capital investment required to comply with these regulations, will drop out, further tightening supply. Clearly, unless we develop a cohesive energy policy—one that considers this nation's energy needs, the sustainability of affordable energy in America is in serious jeopardy.

Meeting Tier 2 gasoline regulations will be expensive, about $8 billion for the industry, and will present a significant challenge to refiners. There are a number of factors that could have implications on supply. Because of the high capital costs, it is likely that some refiners will be unable to justify the investments, and will simply shut down. Most others, because of the high cost of conventional desulfurization technology, will use new and unproven technologies to reduce the sulfur content of fuels. These new technologies, while being less costly, will have limited commercial experience and will likely result in more initial operating problems and increase the risk for supply disruptions. In order to meet the deadline of 2004-06 required by the EPA, the industry will face significant hurdles to obtain the necessary permits, engineering and construction resources, and hardware to complete the work on time. If the EPA does not properly facilitate the permitting process or if other regulations, like the proposed diesel sulfur regulations or a ban on MTBE, overlap the Tier 2 work, then we are on a course for disaster. Fuel supply disruptions could be experienced for long periods of time, leading to fundamentally higher prices at the pump.

Likewise, I am deeply concerned about the EPA's proposed diesel fuel sulfur rule. I have strong doubts that it will be possible to consistently maintain needed supplies of diesel within the 15 ppm sulfur level cap proposed in this rule. With the current distribution system, it will be extremely difficult to deliver diesel with a 15 ppm cap to consumers and maintain the integrity of the sulfur level of the product. Diesel must share a distribution system with other products that have significantly higher sulfur levels. I believe that due to the high cost to produce 15 ppm sulfur diesel, many refiners will choose not to participate in the on-highway diesel market or will limit their production to lower volumes than they manufacture today. Some will be forced to simply go out of business. This could drastically reduce the supplies of diesel and supply disruptions and price spikes could well be the norm.

The bottom line is that the sulfur level for on-highway diesel being proposed by the EPA is too low and the timing is too soon. Similar health and environmental benefits can be obtained from a more reasonable 50 ppm sulfur cap. Nevertheless, the EPA arbitrarily selected the NOx tail pipe emission standards for the proposed diesel sulfur without the technology to support the standard. The engine manufacturers don't have the after treatment technology today to meet the standard and the oil industry doesn't have the desulfurization technology to reduce sulfur to the levels being required by proposal in a cost-effective manner.

Next year the EPA plans to propose yet another rule to lower the sulfur content of off-road diesel. Here again with the manufacturing, supply and distribution issues already mentioned, the supply of off road diesel will likely drop and prices will increase for the agricultural community.

CITGO believes that a new Regulatory Policy is urgently needed to maintain the supply petroleum products that keep the nation moving, and to ensure the continued viability of the nat petroleum refining system.

The coordinated implementation and integration of environmental rules and regulations absolutely necessary to ensure that U.S. energy needs are met. Higher energy prices that disrup American consumers' budgets can be avoided with a correction in the direction of regulatory po The current "command and control" regulatory system is ill suited to address the nation's remai environmental concerns in a practical way. New rules covering air emissions and fuel formulat are wrecking havoc on the nation's petroleum refineries. These new rules are on top of the ove health and environmental rules that have already been imposed on the refining and marketing industry. Government agencies at all levels must adopt processes to analyze and prioritize risks then subject proposed solutions for the highest risks to a thorough cost/benefit analysis.

Comprehensive reform legislation has been under discussion in Congress for several years but no progress has occurred.

Adding regulations that are not cost effective on top of existing rules damages the refining industry's ability to compete in world markets. Many major petroleum companies are divesting refining and marketing assets because of their low profitability, others are merging operations or entering into partnerships to maintain economic viability. The current regulatory direction will cause the U.S. to be dependent on even greater percentages of imported motor fuels.

The government can reduce the potential for market volatility by making environmental regulations more reasonable and workable. Improved regulations would give companies more flexibility to adjust to problems that may have temporary impacts on supply and price. This applies especially to fuels regulations, including EPA's new diesel sulfur proposal, which sets a standard beyond what the technology will support. Congress should mandate and police federal agencies' adoption of these principles:

1. **Prioritization**: Regulations should address the greatest concerns first. So much improvement has been made in the petroleum industry, that many have questioned whether the greatest concerns aren't really from other sectors.
2. **Use Current Data**: Regulatory priorities and risk assessments must be based on sound science and the most current data. This would include allowing time for the benefits of existing rules to be realized before imposing new regulatory programs addressing the same concern. No regulation should be finalized unless a favorable risk assessment using the best science and a realistic cost benefit analysis demonstrates that the most reasonable regulatory alternative has been selected. When performing regulatory analysis based on technologies that have not been commercially proven, the level of uncertainty surrounding costs and performance should receive careful evaluation.

3. **Cost/Benefit Analysis**: The current regulatory system is inefficient and outdated. Some recent environmental rules have costs that are far in excess of expected benefits. A new system that carefully balances the total anticipated cost of compliance (capital plus maintenance) over a specified time frame against the total anticipated benefits to be derived from implementation over the same time frame will provide a framework to ensure a strong and competitive economy.
4. **Stakeholder Involvement**: State and local governments should have a more active role in setting environmental priorities and enforcement. In addition, regulators must identify all "sources" of a particular concern and include those sources in their rulemaking even if they are beyond the scope of the current "regulated community" or "sources."
5. **Flexibility**: Regulations should set performance requirements, but allow for the creation of innovative solutions to reach those goals. The regulated community is in a better position to find solutions to environmental/health concerns. In addition, regulations must provide adequate lead-time for scoping, technical option evaluation, design, engineering, financing, permit acquisition, equipment procurement, field construction, and start-up. Four years is the minimum time necessary after finalization of requirements for implementation of significant refining industry investment. The required lead-time can be longer as the magnitude of the investment increases.
6. **Accountability**: Each regulation should include an automatic sunset provision that can be overridden, if necessary. Each of the regulations would be subject to a "post implementation audit" to determine the effectiveness of the regulation as compared to the initial identification, prioritization and cost/benefit analysis.

Environmental policymakers are responsible to society at large—of which the business community is a vital part. The responsibility of policymakers extends not only to devising laws and regulations that improve public health and the environmental, but also to determining their impact on the nation's economic and energy resources. Politics and not science drives too many of our nation's

regulatory policies and priorities. For example, EPA is charged with ensuring a healthy environment for all citizens. The responsibility for energy supplies falls, however, to the DOE, whose advice is frequently ignored by the EPA. The DOE and EPA should equally share responsibility for new fuel policy that can be cost effectively manufactured and distributed throughout the nation. These agencies should also heed petroleum industry advice on fuel policy.

Specific Recommendations:

- **Harmonize Regulations** - Fuel quality changes and the necessary investment must be appropriately sequenced with minimum overlap. The Tier 2 Rule gasoline sulfur reduction and other product specification changes should not be mandated for implementation in the same time frame, otherwise permitting, engineering, and construction resource constraints will likely result in higher costs, inability to meet the mandated schedules, and product supply disturbances. Other environmental regulations, such as the Refinery MACT phase II rule, should likewise be sequenced with other similar pollutant control rules as well as fuel regulations. Without regulatory harmony many refining and marketing companies will quit the business leading to more regional supply shortages.

  While not overlapping the implementation requirements, the EPA should finalize the timing and specifications for on- and off-highway diesel sulfur reduction and MTBE use as soon as possible. Potential efficiencies exist for providing support facilities common to these programs and gasoline sulfur reduction.

- **Regulatory Certainty** - Regulations should include certainty in scope, timing, and requirements, to allow the refining and distribution industries to make effective investment decisions. Regulations that introduce uncertainty into the outlook for required product qualities or product demands will increase the hesitancy of individual companies to invest. For example, the Tier 2 Rule includes an expectation that the EPA will develop a future provision dealing with gasoline

sulfur cap flexibility during processing unit downtimes. Until the flexibility that such a provision might provide is known, refiners are unable to plan effectively for necessary facilities. Likewise, the EPA should clarify its position on individual state fuel requirements. Currently there is potential for state action that could undermine the Tier 2 Rule credit banking and trading provisions, and this potential creates uncertainty for investment planning.

- **Very Low Sulfur Gasoline and Diesel Requirements** - Requirements for reducing gasoline or on-highway diesel sulfur below 30 ppm average should not be imposed until significantly more study can be completed to provide a basis for sound conclusions about the cost, benefit, producibility, and deliverability of products with very low sulfur levels. There is a significant risk of inadequate supplies should on-highway diesel sulfur levels below 30 ppm be mandated.
- **Driveability Index** - The current DI specification should not be changed until additional study can provide a sound basis for thorough analysis of the cost effectiveness and potential impacts on supply of any change. Refinery modeling in this study predicts high cost to reduce average DI. While there may be potential to lower this cost by reducing testing and operational variability, this potential is not sufficiently understood to support sound regulatory analysis.
- **Environmental Justice** - The EPA should be prepared to promptly address and resolve environmental justice claims that arise during the permitting process. The EPA should support state and local agency decisions where environmental justice issues have been addressed during the permitting process.
- **Emission Offsets** - A portion of the emissions reduction resulting from use of lower sulfur fuels should be allowed as an offset to the stationary source emissions resulting from the new facilities required to produce the lower sulfur fuels. The EPA, state and local agencies, and industry members should work jointly to identify additional action steps to provide timely permitting while continuing progress toward meeting environmental goals.

STATEMENT OF DON HUTCHENS
EXECUTIVE DIRECTOR
NEBRASKA CORN BOARD
BEFORE THE
UNITED STATES SENATE COMMITTEE
ON AGRICULTURE, NUTRITION, AND FORESTRY

JULY 20, 2000

Mr. Chairman and Members of the Committee, thank you for the invitation to share with you the impacts of escalating energy prices on agriculture and more specifically on the farmers who I represent in Nebraska. I want to say at the outset that I not only represent the 30,000 corn producers in Nebraska in my professional responsibilities, but I am also a producer myself. It was during Senator Kerrey's term as Governor of Nebraska that I left full-time farming so I could help influence the future of agriculture in the Nebraska Department of Agriculture. I thought 1985 was a difficult time to be in agriculture, it was also a difficult time in representing the industry that I feel so strongly about. I'm somewhat familiar with difficult times in agriculture; my father, now 91, still resides on the home place. I am concerned that if there are not dramatic changes in agriculture policy we may be on the brink of yet another agriculture depression.

By now I'm sure you have all heard from your constituents in the states you collectively represent how bad energy prices are hitting the various segments of the economy. I'm here today to say that the industry that will be impacted the most and least capable to pass the costs of higher energy along is the American farmer.

If I leave you with nothing else today let me leave you with this: I believe the effort that you on this committee and in Congress put forward to provide agriculture with $5.4 billion of market loss payments may all be lost to the increased cost of energy. This means that the money will not be used to pay existing bills, or to pay down mortgages or operating notes; it won't be used to buy capital goods, and it won't be used towards their children's education. Agriculture producers will incur an additional $4-$6 billion due to higher energy costs. Producers in irrigating states like Nebraska will be using more energy to keep crops growing, but those additional costs will not be passed on to the rest of us when we buy a loaf of bread or a pound of meat in the supermarket. Everyone else in the food chain will add to the cost of processing and transportation to cover additional energy costs, but not the American farmer. According to the Economic Research Service of USDA, net cash income is forecast to drop $5.2 billion due primarily to high energy costs and low commodity prices.

Nebraska irrigators have no choice but to continue irrigating to be eligible for crop insurance. Maximizing bushels will be the only means of income through the Loan Deficiency Program. Typical irrigators in Nebraska spend $20 per acre for fuel to irrigate, but the cost could exceed $50 per acre this year.

Irrigated or not, farmers across America are hit hard with higher energy costs. Farm Bureau President Bob Stallman of Texas says fuel prices will push farm expenditures up an additional $3 billion, which doesn't even consider additional volume used due to drought conditions. Diesel

fuel per gallon has risen from $0.70 to $1.10, while gasoline has gone from $1.15 to as high as $1.83 and propane prices have increased from $0.53 to $0.78.

In Nebraska the increased costs for diesel fuel under our drought conditions could cost the typical producer $6,620 on one well compared to $2,172 last year. Nebraska is home to approximately 79,000 irrigation wells. The four highest cost factors in corn production in my area of the United States are energy, fertilizer, seed and chemicals. All of these use large amounts of gas, diesel, natural gas and electricity. Every aspect of agriculture is dependent on energy, from the delivery of inputs, the inputs themselves, the custom hire, the planting and harvesting, and the transportation of bulk commodities and live animals. Since my wife's family is also heavily into agriculture, particularly in livestock in western Nebraska, I can tell you that every truckload of cattle or hogs that leaves their farm costs an additional $50 charged by the trucker for higher fuel costs. That's a total of $2,250 that comes out of their bottom line.

Over the last few years, agriculture and the industries that serve agriculture have worked hard to reduce the energy dependence of our food production. Equipment today uses less fuel per hour than a few years ago, and farmers have made great strides to use minimum and no tillage practices to reduce energy use and conserve water and soil. Our use of genetically enhanced crops has helped to reduce field applications. But, there is no way around the fact that it takes hard work and fuel to provide this country and other parts of the world with the most abundant, highest quality and cheapest food supply. I would also like to say that those very farmers and ranchers paid for all the cost of adapting this technology.

The news has changed in the countryside from gas and diesel prices to the escalating price and availability of natural gas. As you know, natural gas prices are tracking with the rest of the energy prices and natural gas is the predominate ingredient in anhydrous ammonia. Natural gas prices have nearly doubled in the last year to their highest levels in more than a decade. Wholesale natural gas prices are now at about $4.44 for a million BTU, compared with $2.39 one year ago. The production of fertilizer is not the only demand for natural gas, but also the generation of electricity; especially this summer, electricity needs are draining the natural gas reserves. My fear is that along with the additional costs for gas and diesel, farmers will be hit this fall and spring with record prices for anhydrous ammonia. Already the gulf price of anhydrous ammonia has risen from $140 a ton to $210, and then you have an additional $35 a ton to get it to the Midwest. Nebraska, Iowa and Illinois used nearly 40% of the United States demand for anhydrous ammonia last year. Doubling of the price could have profound impacts on farmers.

While it looks green for the most part across the Corn Belt, except for the drought conditions in Nebraska and in the Southeastern United States, the real color is red. Prices for corn and soybeans have shown little incentive for forward pricing, cost of production continues to increase and optimism is hard to find among my neighbors in south central Nebraska. High-energy costs have damaged the spirit of many producers this year, it has been one more issue for them to try to overcome.

If I were in your seat I would have to ask what is it that you can do to help this small part of the American population. It seems that every time you turn around farmers and ranchers need your help, and that is exactly

what they need. I would like to share just a few suggestions on what might provide some incentive for those independent producers to continue to do what they do best...growing food for the rest of us to enjoy.

- First related to energy, 99 percent of the farmers in Nebraska tell us to do everything possible to develop and expand this domestically produced fuel called ethanol. Contrary to what the American Petroleum Institute says, ethanol is not the root of all evil and Congress should pursue aggressive legislation that reduces our dependence on foreign crude and expands the market for ethanol, while using our corn supply in the process.

- Expand the domestic production of natural gas, even if it takes tax incentives or the need to increase our imports of natural gas. Farmers cannot handle a double whammy of increased fuel and fertilizer costs next year.

- Expand the market for Biodiesel. We have the capability to take technology to a new level and use soy-oil and ethanol far more than we do today.

- Expand tax breaks for farmers and ranchers' fuel needs and for adapting lower energy use standards.

- Seriously consider the impacts of EPA's action on reducing sulfur content in diesel to 15 ppm versus the 500 ppm that are used on the farm today. The implications may hit farmers harder than anyone else. Farmer owned refiners that produce diesel and market it through the cooperative system may not be able to meet these standards or costs due to size. It appears a 50 ppm cap versus a 15 ppm cap may help agriculture.

- More study and research on the impacts of Carbon Sequestration, to determine if we can pay farmers for carbon storage. Or can we provide farmers a green payment for continuing to practice sound environment farming that protects the soil, air and water that we all enjoy.

In the big picture, if commodity prices were high enough for farmers to afford to pay increased energy prices then the problem for you and for the farmers would not be so severe. What can you do to help?

- Stop wrangling over FAST TRACK negotiating authority. Let's get on with the business of exporting. We told farmers to produce for the marketplace but when we did that the marketplace was not open for business. We continue to plead for more money in programs like the Market Access Program and the Foreign Market Development Program.

- Serious sanction reform is needed so we can export into new markets that we previously have been shut out of. I respect the work of USTR Charlene Barshefsky, but we need to continue to put agriculture at center stage. We cannot lose markets in countries like India due to poor trade negotiations. The balance of trade that agriculture represents is far too important to ignore.

- Finalize the PNTR vote in the Senate for China. We don't have time in agriculture to wait while other countries like Australia and Europe steal markets away from us.

- Simplify farm storage programs and announce them early so farmers can

work with lenders and the agri-business industry. Expecting farmers to put 25% down with net cash income dropping does not pencil into the cash flow. Farmers waited 4 months for the announcement of the program.

- Expand CRP and payments. It reduces the use of fossil fuels, it's great for the environment and for the habitat.

- Create a Farmer Owned Reserve for grain and a Strategic Reserve for Ethanol.

- Other options have to be considered in drafting new farm legislation. Farmers' share of the increasing food dollar continues to drop. Farmers need to have you listen to their ideas and consider changes to farm legislation like the Flexible Fallow Program.

I want to thank you again for considering the impacts of high energy costs on production agriculture. This dilemma could not have come at a worse time for Nebraska farmers. Too many young people are walking away from production agriculture while the debt continues to mount for those remaining. The spirit to look forward to a better year ahead is slipping through many a farmers hands. The commitments by Congress to provide agriculture a safety net of market loss payments this year may ultimately only cover the increased costs of energy.

Oral Testimony of
R. Skip Horvath
President
Natural Gas Supply Association

Before the
Committee on Agriculture, Nutrition and Forestry
United States Senate–106 Dirksen

July 20, 2000

Thank you, Mr. Chairman, for this opportunity to discuss the important role that natural gas can play in agriculture.

I am R. Skip Horvath, President of the Natural Gas Supply Association (NGSA). The Natural Gas Supply Association represents integrated and independent companies that produce and market domestic natural gas. Established in 1965, NGSA encourages the use of natural gas and a regulatory climate that fosters competitive markets.

I would like to address four topics very briefly in my remarks today, then expand those remarks for the record. I will discuss:

- First, the increasing demand for natural gas.
- Second, the ways that supply meets potential demand.
- Third, what the natural gas producing industry is doing to bring more supplies to market.

Lastly, I will discuss government policies that raise the cost of natural gas and, in the process, damage our economy and our environment.

There has been a fundamental shift in the natural gas market. Natural gas is a clean, safe, efficient and reliable fuel, which is why the market is demanding it for residential, commercial, industrial and electric generation purposes. Farmers have used natural gas for crop drying, and possible future uses include air conditioning. This increased demand for natural gas, along with a strong economy driving up all energy use, is resulting in a paradigm shift in the market. Natural gas traditionally has a seasonal demand pattern based on winter residential and commercial heating demand; now it is also experiencing a strong summer market, as natural gas increasingly becomes the fuel of choice for electric generation.

- The Energy Information Administration (EIA) estimates that natural gas fired generation has increased between 3.5 percent and 4.0 percent over 1999 levels during the first half of 2000.
- The strong economy has increased energy demand from all groups of customers of the natural gas industry;

A competitive, free marketplace works to everyone's advantage. Free markets have not always been allowed to work for natural gas, and consumers have suffered the consequences. For many years, the federal government regulated the price paid to natural gas producers (the "wellhead" price). This intervention resulted in artificial shortages, and government officials wisely decided to let competition evolve instead. History has shown that over the long term, customers benefit from a competitive natural gas market through lower prices and reliable service. In 1989 Congress enacted the

Natural Gas Wellhead Decontrol Act, which phased out natural gas price controls. During the past 15 years, demand for natural gas has grown while the prices paid for natural gas service declined in real terms from $4.10/MMBtu in 1983, when the government regulated natural gas prices, to $3.05/MMBtu in 2000 under competition (1998 dollars; EIA data and publicly available data).

Today, natural gas is a commodity that is bought and sold in a competitive market where prices reflect supply and demand relationships. The natural gas supply industry is highly competitive with many participants.

- There are thousands of natural gas producers.
- The five top producers represent only 17 percent of U.S. market demand;

Almost all (87%) of the natural gas consumed in the U.S. is produced in the U.S. Most of the remaining natural gas supplies are transported from neighboring Canada via reliable pipelines.

Natural gas is a commodity. Like other commodities, natural gas is traded in an open market. Natural gas price movements occur as the supply and demand cycles interact. Factors affecting the current natural gas market are:

- Weather: The U.S. is projected is to have a warm summer and colder winter than in the previous few years due to the dissipating effects of La Nina;

- Other fuels: A falloff from recent highs in nuclear power and hydroelectric output is expected to bring forth more natural gas use for electricity generation this year and next;
- Storage injections: Storage injections are in the "normal" range.

Supply is tight. Because of lag times inherent in matching supply with increased demand, supplies can become tight. According to EIA and publicly available data, the price of natural gas and oil collapsed in 1998 and 1999, resulting in the industry allocating less capital to exploration and production activities. Now that continued strong demand has resulted in the increase in natural gas and oil prices, the industry is able to invest more in production. As a result, supply is expected to slowly begin increasing.

Tight supply is not a sign of inadequate resources. We have an ample resource base of natural gas to supply the growing market. The National Petroleum Council estimates that 1,466 TCF of natural gas resources exists in North America. That number continues to grow as new technologies allow producers to extend the frontiers for development of existing natural gas resources.

In the long run, producers face other challenges to ensuring supply. Much of the nation's resource base resides on federal lands or beneath federal waters that have drilling restrictions. The National Petroleum Council reports that two of the most promising regions,

the Rocky Mountains and the Gulf of Mexico, are largely unavailable due to drilling restrictions. Access is crucial because the following natural gas resource base is off limits or subject to significant restrictions:

- 100 percent offshore both coasts
- 56 percent of the eastern Gulf of Mexico
- 40 percent of the Rocky Mountain region

Producers are responding to the market. Today, with tight supply and rising demand, producers are individually responding by working to bring more natural gas to the market. Indicators of increased production include:

- The number of active natural gas drilling rigs is up 90 percent from April 1999.
- 75 percent of the active U.S. drilling rig fleet is engaged in drilling for natural gas.

However, there is a lag between the time producers begin to drill and the time it takes to get that gas to market. It can take anywhere from a few months to several years to bring supply to market, depending upon the geographic location and point in the exploration and development cycle at which producers begin the process.

- Wells: If a drilling prospect in a currently producing field already exists, it takes an average of three months to bring that gas to market. If, however, wildcat exploration for new fields is required to locate new sources of natural gas, and

depending on the complexities of development, it can take several years for that gas to reach market.

- Workers: Moreover, to the extent that individual companies had to cut back drilling, they also had to let go of rig workers; now, rehiring skilled and unskilled workers is part of the gearing-up process.

- Safety and Environmental Compliance: Two cornerstones of drilling for natural gas are ensuring that we produce natural gas safely and in compliance with all environmental regulations. Producers are complying with existing regulations and are committed to do so.

We appreciate this opportunity, Mr. Chairman, to inform Americans about these facts. And we need your help to refrain from governmental interfering with the competitive forces introduced by the U.S. Congress in 1989, competitive forces which have brought benefits to natural gas consumers. In short, the best approach when dealing with natural gas supplies is to let the competitive market work to benefit all our citizens.

Thank you.

NCFC®
NATIONAL COUNCIL OF FARMER COOPERATIVES

July 20, 2000

The Honorable Richard Lugar, Chairman
Committee on Agriculture, Nutrition and Forestry
U.S. Senate
Washington, DC 20510

Dear Mr. Chairman:

On behalf of the National Council of Farmer Cooperatives (NCFC), I am pleased to submit for today's hearing record the attached June 15, 2000 testimony by Mr. Curt Eischens that was presented to the Environment and Public Works Committee's Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety.

Today's hearing is focused on recent supply and price developments on the gasoline market. Regardless of the causes, the recent difficulties in the gasoline market highlight the reality that the nation's petroleum supply and distribution system has evolved to where there is little margin for error.

NCFC's June 15 statement is offered, not to provide input on the gasoline issue, but instead to call to the attention of this Committee a major regulatory proposal being considered by the U.S. Environmental Protection Agency (EPA) regarding sulfur levels in highway diesel fuel that could unintentionally lead to similar or worse supply and price problems for diesel fuel in the future, jeopardizing the economic viability of farmer-owned, cooperative refiners and imposing major adverse impacts on agriculture and rural America.

NCFC stands ready to work with this Committee and others to help achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as our constituents need and want cleaner air, they also require reliable and affordable fuel supplies.

Respectfully Submitted

David Graves
President

cc: The Honorable Tom Harkin, ranking minority member

Attachment

50 F STREET, NW • SUITE 900 • WASHINGTON, DC • 20001 • 202-626-8700 • fax 202-626-8722 • Web site www.ncfc.org

NCFC®

NATIONAL COUNCIL OF FARMER COOPERATIVES

STATEMENT OF CURT EISCHENS

REPRESENTING THE
NATIONAL COUNCIL OF FARMER COOPERATIVES

BEFORE THE
SUBCOMMITTEE ON CLEAN AIR, WETLANDS,
PRIVATE PROPERTY, AND NUCLEAR SAFETY
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
U.S. SENATE
WASHINGTON, DC

JUNE 15, 2000

50 F STREET, NW • SUITE 900 • WASHINGTON, DC • 20001 • 202-626-8700 • fax 202-626-8722 • Web site www.ncfc.org

Serving America's Farmer-Owned Cooperative Businesses Since 1929

INTRODUCTION

Good morning, Mr. Chairman, my name is Curt Eischens, and I am a fourth generation farmer from Minneota, Minnesota.

I am here today as a representative of the National Council of Farmer Cooperatives (NCFC) to speak to you about EPA's proposed rule to reduce the sulfur levels in on-road diesel fuel. But more importantly, I will speak as (1) a director of a regional co-op, Cenex Harvest States Cooperatives; (2) a member of a local co-op; and (3) a family farmer and citizen of rural America.

American agriculture is vitally dependent upon a reliable and affordable supply of diesel fuel in carrying out its food, natural fiber, renewable energy, conservation and other missions. Through their cooperatives, farmers have invested heavily in a petroleum refining and distribution system to help assure a reliable and affordable supply of this vital input. Though less than two percent of the petroleum refining industry, farmer cooperatives account for about 40 percent of all the on-farm fuel use in the United States and are unique in that the customer is also the owner. Farmer cooperatives also supply much of the highway diesel and home heating oil needs in rural America.

First, let me say that farmer cooperative representatives have been working with EPA, and we appreciate the agency's recognition of the unique structure and challenges of farmer-owned cooperative refiners, as well as possible compliance flexibility options identified in the proposed rule. However, we remain deeply concerned that the proposed sulfur diesel standard is overly stringent and could have adverse unintended consequences for American agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers.

EXECUTIVE SUMMARY

If implemented as currently drafted, the EPA proposal could: (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing diesel production capacity; (2) force cooperative and other refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, especially in the agricultural heartland; (3) jeopardize the economic viability of farmer-owned refineries, leading to further concentration in the petroleum industry serving rural America; and (4) impose major costs on farmers directly, with no return on investment, and take away scarce resources desperately needed for investments in projects to improve farm income. Diesel fuel costs for farmers and other rural consumers could be 10 cents or more at 15 ppm, with much higher price spikes in the event of supply disruptions.

It is important to understand that even though the EPA proposal is for on-highway diesel, the rule will also adversely impact farm and other off-highway uses of diesel fuel. It has been our experience that much of the petroleum storage system, particularly in the rural markets served by our cooperatives, is generally capable of handling only one grade of diesel fuel. This was certainly the case when the existing 500 ppm standard for highway diesel was implemented. Thus, our farmer-owned refineries will be forced to go to the ultra-low standard even though much of our market is for farm uses.

We are deeply concerned about several key elements of EPA's proposed rule. For example, we have great concerns about going lower than a 50 ppm cap. We believe a level as low as 15 ppm at the pump puts diesel fuel supplies at risk, particularly in rural America. We know that any phase-in with a fuel requirement for two on-road diesels would be extremely costly.

For these reasons, we strongly urge that the rule be withdrawn until serious unresolved issues can be addressed. We further recommend that any final rule should include the following: (1) set an on-road diesel fuel sulfur cap of about 50 ppm, which would be a 90 percent reduction from the current level; (2) provide refiners maximum flexibility to meet the new standards, including the ability to choose which fuel standard to meet first, by 2010 -- the new gasoline rule or any on-road diesel rule; and (3) not require a phase-in or two low sulfur diesel fuels.

FARMER COOPERATIVE SYSTEM

But before I address these concerns and recommendations more specifically, I believe it is important that you understand and appreciate the farmer cooperative system from the bottom up, so you can better understand the adverse impacts this rule could have on agriculture and rural America. There are approximately 1.8 million farm families in the United States today. There are over 3,500 farmer-owned local co-ops, and many of these locals belong to larger regional co-ops such as mine---Cenex Harvest States Cooperatives. At the national level, we are represented by the National Council of Farmer Cooperatives.

In rural America, bulk fuel terminals and service stations are often many miles apart. These 3,500 local co-ops sell farmers all the inputs necessary for their production needs, including fuels for powering their equipment and vehicles, drying their crops, heating their livestock enclosures, and heating their homes. Many of these local co-ops depend heavily on petroleum sales to farmers for the majority of their sales income and their livelihood. To properly supply farmers, local co-ops maintain fuel tanks and pumps, and in turn, farmers maintain their own fuel tanks on their farms.

Adequate and affordable fuel supplies have always been very important to agriculture and rural America. Because of the special needs of agriculture and problems with relying on existing petroleum refiners, farmers in the early 1900s chose to pool their resources and invest in refineries. In 1979, there were eight refiner co-ops. Today there are only four refiner co-ops that supply much of the needs of Midwest farmers. They are (1) Cenex Harvest States Cooperatives' refinery in Laurel, Montana; (2) Farmland Industries' refinery in Coffeyville, Kansas; (3) the National Cooperative Refiners Association in McPherson, Kansas; and (4) Countrymark Cooperative's refinery in Mt Vernon, Indiana. These cooperatives are owned by approximately one million farm families - over half of all the farmers in the United States --in some 28 states.

My regional cooperative, on which I am an elected Board Director, is Cenex Harvest States. We are headquartered in St Paul, Minnesota and are comprised of over 1,000 local co-ops, in 18 states. We are owned by over 325,000 farmers, or nearly 20% of all farmers in the United States.

CONCERNS

Why am I as a farmer and cooperative leader concerned about the proposed rule?

FIRST: As a representative of NCFC, I stress the need to consider all of agriculture, not just the four farmer-owned cooperative refineries. Agriculture is the backbone of the United States economy from the "Back 40 on the farm to Aisle 40 in the grocery store" and contributes approximately 16% of the Gross National Product. In performing this vital role, we are heavily dependent upon diesel fuel. We believe EPA is moving "too far, too fast," with a rule that will directly cost the farmer money, with no return on investment and taking away scarce resources desperately needed for investments in projects to improve farm income. I have a letter for the record to EPA Administrator Browner with signatures of nearly 30 organizations representing all aspects of agriculture. The letter raises serious concerns about EPA's proposal.

SECOND: As an elected Director of Cenex Harvest States Cooperatives and one who will have to vote to approve spending farmers' money to make these expenditures, I have to look at the costs of this rule. We own refineries, pipelines, terminals, tankage, truck stops, local town convenience stores, and fuel delivery trucks -- all will be adversely affected by the rule.

For example, the rule will directly affect our refineries. How will we finance the capital expenditures? There are many air quality rules going into effect in the near future with which we will have to comply as well, such as – ozone, PM 2.5, regional haze, maximum achievable control technology, new gasoline specifications by 2003, and now, proposed on-road diesel fuel specifications by 2006. We also expect new EPA rules on off-road diesel fuel and green house gas emissions in the near future. These rules have a costly cumulative effect. How will we pay for them all? It will be extremely difficult at best.

Co-ops do not have the same access to equity markets as other businesses. For example, unlike our competitors, we cannot issue stock to raise capital. We cannot turn inward to our member owners for funds -- our current farmer-owners do not have the money. Over the past three years, Congress has had to approve about $20 billion in emergency funding to help farmers survive hard economic times. Our owners are farmers, many of whom have limited means.

THIRD: As a member of a local cooperative, it is even more challenging. We'll have to address many of the same issues as our regional co-ops, but with even less flexibility. Consider EPA's phase-in and two diesel fuel proposals. Regional co-ops will be of little help to local co-ops because they are extremely stretched for cash and have little working capital. The co-op system is heavily dependent on and limited by fuel tankage. If a dual low sulfur diesel system is mandated, how would we pay for the additional tanks and pumps? The answer is -- most of these local co-ops and Mom and Pop convenience stores cannot. We will be forced to decide which diesel fuel to carry and therefore lose those customers that need the other type of diesel.

What happens if EPA requires a phase-in? Again who pays? Farmers, local co-ops, small town fueling stations, co-op terminals and the regional co-ops will pay. Why? Because many of us will have to put in additional fuel tanks for only a few years. There are 1.8 million farmers, 3,500 local co-ops and 1,500 farmer owned convenience stores and fuel pumps in rural America that might have to comply with increased tank and pump requirements for a four to five-year phase-in. This is certainly not cost-effective for American agriculture.

FOURTH: I speak as a farmer, especially on behalf of my farm family. If our recommendations are not adopted, my farm family will be heavily penalized. How? First, who will pay for these hundreds of millions of dollars of upgrades? Well, farmers will have to pay through reduced patronage. I will lose patronage because my regional co-op will have to finance the refinery upgrades, thereby reducing any returns normally distributed from the regional co-op back to the local co-ops and on to farmers. I will lose patronage from my local cooperative if the local co-op has to pay for increased tankage or loses sales. Second, to whom will these additional fuel costs for ultra-low sulfur fuel be passed, at rates estimated to be from 10 to 15 cents a gallon? The answer again is to farmers.

Our livelihood depends on the success of our farm and the viability of our rural community. Local co-ops are an important part of these rural communities. We are very concerned about the environment. We believe in clean water and clean air and think a 90% reduction in diesel sulfur levels goes a long way in achieving clean air goals. What EPA is proposing – a 97% reduction – goes too far, particularly for rural parts of the country that do not have these clean air problems.

RECOMMENDATIONS

What can be done to help the farmer cooperative petroleum system and farm families?

CONGRESS can help the farm family and U.S. agriculture by urging that the proposed rule be withdrawn and reconsidered. Now that everyone has recently become aware that the on-road diesel rule can have major agricultural impacts, and is not just a refiner issue, Congress should direct EPA to relook the proposed rule's impacts on agriculture and rural America through the Small Business Regulatory Enforcement Relief Act process. It is important to understand the impacts on farmers and local co-ops as small businesses. Congress can also require for proposed new diesel sulfur specifications what it did for unleaded gasoline in 1985.

What happened in 1985? Uncertain about the impact of reducing lead in gasoline, Congress passed legislation directing EPA and USDA to conduct a two-year study and joint report. The relevant section from PL 99-198 is attached for the record. EPA and USDA completed their study in 1987, entitled "Effects of Using Unleaded and Low Leaded Gasoline, and Non-lead Additives Designed for Leaded Gasoline." This study revealed serious problems that had to be mitigated during the lead phaseout. We believe a study is also needed on EPA's ultra low sulfur diesel proposal and its potential impacts on the availability and costs of diesel fuel for farmers and rural America as well as any effects on agricultural equipment before the rule is finalized.

ALTERNATIVELY, if the rule is not reconsidered, we recommend that Congress support the following:

- Set a petroleum industry cap of 50 ppm for sulfur in highway diesel fuel, in order to achieve major environmental benefits and avoid extreme costs.
- Provide maximum compliance flexibility. For example, EPA has suggested some potential flexibility by (1) recognizing that refiner co-ops have the same difficulties as small refiners and asking for comment on eligibility for compliance flexibility mechanisms that may be available to small refiners; and (2) permitting a refiner co-op to apply for a compliance extension as a hardship case. NCFC supports these compliance flexibility options, in combination with the 50 ppm standard.

- Should EPA move to an ultra-low standard for sulfur, such as 15 ppm, while compliance flexibility may help during the transition implementation costs will still be excessive. That is why we have argued for the permanence and affordability of the 90% reduction in diesel sulfur levels.
- Because the fuel rules for gasoline and on-road diesel are interconnected, and expected to overlap in a narrow time frame, refiners also need the flexibility to comply with these two rules in the order best achievable for them. Under some circumstances in the gasoline rule, some refiners may not have to fully comply until 2010. We also suggest that we be given until 2010 to comply with both rules.

- Do not require a phase-in or two low sulfur diesel fuels. Local co-ops and farmers cannot afford to add more tanks and pumps.

If the final rule contains these basic elements, we'll work to get the job done.

We look forward to working with the Congress, EPA and other stakeholders to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as farmers need and want cleaner air, we also require reliable and affordable fuel supplies. I urge Congress, on behalf of farmer cooperatives, my Minnesota farm family, and other farm families across rural America, not to let EPA move "too far too fast."

Exhibit, NCFC June 15 E&PW Testimony

May 9, 2000

The Honorable Carol Browner
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building South, Room 3000
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Administrator Browner:

The undersigned agricultural organizations and others that serve agriculture are deeply concerned that the Environmental Protection Agency's (EPA) proposal to reduce the sulfur levels in diesel fuel could have adverse unintended consequences for American agriculture and rural America. These could come in the form of fuel supply disruptions and excessively higher prices for farmers, for both on-farm and highway fuels, if the proposed rule is implemented as currently drafted.

The EPA draft proposal could (1) increase the threat of supply disruptions, particularly in rural America, by effectively reducing refinery capacity; (2) force many refiners to produce more costly ultra-low sulfur diesel fuel for farm and other off-highway uses due to distribution limitations, particularly in the agricultural heartland; and (3) jeopardize the economic viability of farmer-owned refineries, leading to further concentration in the petroleum industry serving rural America. Costs for farmers and other rural consumers could range from a 5 cents per gallon increase if sulfur levels are set at 50 parts per million (ppm) to 10 cents or more at 15 ppm.

In order to mitigate these potential problems, we strongly urge the agency to (1) set an onroad diesel fuel sulfur cap of about 50 ppm, which would be a 90 percent reduction from the current level; (2) delay and phase in any implementation of a diesel rule until the final gasoline rule has been implemented; and (3) maintain a higher off-highway diesel fuel standard in order to minimize costs to farmers and provide refiners with maximum flexibility to produce diesel fuel.

We support the Administration's clean air accomplishments, but we are concerned that an overly stringent diesel sulfur proposal could unnecessarily harm U.S. agriculture and rural America, particularly during a time of continuing economic hardship that threatens the survival of many farmers and ranchers.

We look forward to working with the Agency to achieve a final rule that is compatible with continued economic viability in American agriculture and environmental progress. Just as our constituents need and want cleaner air, they also require reliable and affordable fuel supplies. We are available to meet with you at any time on this important matter.

Sincerely,[1]

Agricultural Retailers Association
American Crop Protection Association
American Farm Bureau Federation
American Feed Industry Association
American Soybean Association
Agrilink Foods
Cenex Harvest States Cooperatives
Cooperative Refining
Country Energy, LLC
Countrymark Cooperative, Inc.
Farm Credit Bank of Wichita
Farmland Industries, Inc.
GROWMARK, Inc.
Institute of Shortening and Edible Oils
National Association of Wheat Growers
National Corn Growers Association
National Council of Farmer Cooperatives
National Farmers Union
National Grain and Feed Association
National Grange
National Private Truck Council
North American Equipment Dealers Association
Pacific Northwest Grain and Feed Association
Society of American Florists
Southern States Cooperative, Inc.
Tennessee Farmers Cooperative
The Fertilizer Institute
U.S. Custom Harvesters, Inc.

Cc: The Honorable John Podesta
The Honorable Dan Glickman
The Honorable Bill Richardson
The Honorable Robert Perciasepe
The Honorable Jacob Joseph Lew
John T. Spotila, Administrator, OMB, OIRA

[1] Contains additional organization signatures after May 9, through June 14, 2000.

FOOD SECURITY ACT OF 1985

STUDY OF UNLEADED FUEL IN AGRICULTURAL MACHINERY

SEC. 1765. (a)(1) The Administrator of the Environmental Protection Agency and the Secretary of Agriculture shall jointly conduct a study of the use of fuel containing lead additives, and alternative lubricating additives, in gasoline engines that are— 42 USC 7545 note.

(A) used in agricultural machinery; and

(B) designed to combust fuel containing such additives.

(2) The study shall analyze the potential for mechanical problems (including but not limited to valve recession) that may be associated with the use of other fuels in such engines.

(b)(1) For purposes of the study required under this section, the Administrator of the Environmental Protection Agency and the Secretary of Agriculture are authorized to enter into such contracts and other arrangements as may be appropriate to obtain the necessary technical information. Contracts.

(2) The Secretary of Agriculture shall specify the types and items of agricultural machinery to be included in the study required under this section. Such types and items shall be representative of the types and items of agricultural machinery used on farms in the United States.

(3) All testing of engines carried out for purposes of such study shall reflect actual agricultural conditions to the extent practicable, including revolutions per minute and payloads.

(c) Not later than January 1, 1987—

(1) the Administrator of the Environmental Protection Agency and the Secretary of Agriculture shall publish the results of the study required under this section; and

(2) the Administrator shall publish in the Federal Register notice of the publication of such study and a summary thereof. Federal Register, publication.

(d)(1) After notice and opportunity for hearing, but not later than 6 months after publication of the study, the Administrator shall—

(A) make findings and recommendations on the need for lead additives in gasoline to be used on a farm for farming purposes, including a determination of whether a modification of the regulations limiting lead content of gasoline would be appropriate in the case of gasoline used on a farm for farming purposes; and

(B) submit to the President and Congress a report containing— Report.

(i) the study;

(ii) a summary of the comments received during the public hearing (including the comments of the Secretary); and

(iii) the findings and recommendations of the Administrator made in accordance with clause (1).

(2) The report shall be transmitted to— Report.

(A) the Committee on Energy and Commerce of the House of Representatives;

(B) the Committee on Environment and Public Works of the Senate;

(C) the Committee on Agriculture of the House of Representatives; and

(D) the Committee on Agriculture, Nutrition, and Forestry of the Senate.

(e)(1) Between January 1, 1986, and December 31, 1987, the Administrator shall monitor the actual lead content of leaded gasoline sold in the United States.

(2) The Administrator shall determine the average lead content of such gasoline for each 3-month period between January 1, 1986, and December 31, 1987.

(3) If the actual lead content falls below an average of 0.2 of a gram of lead per gallon in any such 3-month period, the Administrator shall—

(A) report to Congress; and

(B) publish a notice thereof in the Federal Register. Federal Register, publication.

(f) Until January 1, 1988, no regulation of the Administrator issued under section 211 of the Clean Air Act (42 U.S.C. 7545) regarding the control or prohibition of lead additives in gasoline may require an average lead content per gallon that is less than 0.1 of a gram per gallon. Prohibition. Regulations.

(g) To carry out this section, there is authorized to be appropriated $1,000,000, to be available without fiscal year limitation.

DOCUMENTS SUBMITTED FOR THE RECORD

JULY 20, 2000

Kingdom of Saudi Arabia
Ministry of Petroleum and Mineral Resources

Ali I. Naimi
Minister of Petroleum and Mineral Resources

Honorable Mr. Richard G. Lugar
Chairman
United States Senate
Committee on Agriculture, Nutrition, and Forestry
Washington, DC 20510-6000
U. S. A.

Honorable Mr. Chairman:

Thank you for your facsimile dated July 12, 2000 inviting me to appear before the United States Senate Agriculture Committee and provide the perspective of the Kingdom of Saudi Arabia, OPEC, or my own personal perspective on contemporary energy issues.

I would like to thank you for this invitation. However, I deeply regret for not being able to appear before the Committee due to many other commitments during the same period. I also would like to inform you that during my visits to Washington, DC., as was the case last year, I do meet with the members of the Senate, members of the Congress, their staff and members of the Energy Department regarding Saudi Oil Policy and our role in the pursuit of stable oil markets worldwide. I hope I will have the opportunity to meet with you on such occasions.

Wishing you all the happiness and prosperity.

Sincerely,

Ali I. Al-Naimi
Minister of Petroleum and Mineral Resources